

Laparoscopic suture Rectopexy versus Laparoscopic Mesh Rectopexy in Rectal Prolapse

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ABSTRACT

Background: Rectal prolapse is an incapacitating condition that can result in embarrassment when something comes out with defecation or forceful activity. It is defined as circumferential descent of the rectum through the anal canal and may be subdivided into complete and partial.

Aim: To analyse differences in outcome between laparoscopic suture rectopexy and laparoscopic mesh rectopexy in complete rectal prolapse .

Methods: A total of 42 patients underwent treatment for complete rectal prolapse at Quaid e Azam Medical College Bahawalpur. Data was collected from January 2016 to December 2019. Of these, 22 patients underwent laparoscopic suture rectopexy and 20 underwent laparoscopic posterior mesh rectopexy.

Results: There were 2 anovaginal fistulae diagnosed in the follow-up period in the mesh group. One patient had severe pain due to localised erosion of mesh and underwent a revision procedure to remove a mesh through an open procedure 14 months after in a 46 year old female.

Conclusion: We support the use of laparoscopic suture rectopexy over laparoscopic mesh rectopexy due to better outcomes in terms of less pain , less constipation and a lower complication rate.

Keywords: Suture rectopexy, mesh rectopexy, rectal prolapse

INTRODUCTION

Rectal prolapse is an incapacitating condition that can result in embarrassment when something comes out with defecation. The objective of this study was to analyse differences in outcome between laparoscopic suture rectopexy and laparoscopic mesh rectopexy in complete rectal prolapse or forceful activity. Patient can have pain, faecal incontinence, bleeding per rectum and constipation. It is defined as circumferential descent of the rectum through the anal canal and may be subdivided into complete and partial. It may be associated with vaginal and/or uterine prolapse in females¹ and is commoner in multiparous females but can occur both in the young and the elderly². Multiple treatment options for this condition are described. Abdominal procedures include laparoscopic suture rectopexy or mesh rectopexy while perineal repair options include the Delorme procedure and Thiersch procedure³. Abdominal procedures are usually preferred for complete rectal prolapse, while perineal procedures are employed for partial prolapse, although this is still debated. Laparoscopic abdominal procedures have similar outcomes to open procedures but are usually more cost effective and reduce hospital inpatient stay⁴. The use of mesh implants can be associated with an intense inflammatory reaction, local scarring, chronic pain, sinus formation and constipation⁵. The aim of surgical treatment is to fix the rectum in the anatomical position until it heals in that position with scar tissue whilst minimising complications.

METHODS

A total of 42 patients underwent treatment for complete rectal prolapse at Quaid e Azam Medical College Bahawalpur. Data was collected from January 2016 to

December 2019 after approval from ethical review committee. Of these, 22 patients underwent laparoscopic suture rectopexy and 20 underwent laparoscopic posterior mesh rectopexy. Preoperatively, all patients underwent bowel preparation with oral laxatives and rectal enema.

All statistical analysis was done using Microsoft Excel 2010 and IBM SPSS v21. Student's t-test was used to compare means in continuous data and chi-square test was used to compare parametric data.

Technique: All the patients undergoing rectopexy were allowed to take fluids only 2 days prior to surgery. All the patients received prophylactic antibiotics prior to surgery. After induction of general anaesthesia, patient was put in Trendelenburg position. Pneumoperitoneum was created with the help of veress needle (closed technique) and 4 ports were introduced. 10mm in umbilicus for camera, 5 mm in right iliac fossa, 5 mm on the right side 1 hands breadth above and medial to right iliac fossa port and last port on left lumbar region.

Intestinal grasper (non-traumatic) was introduced through the left port and rectum was retracted towards left side. Peritoneum was incised just lateral to right rectal wall starting at the level of sacral promontory and post rectal space entered. Then the dissection was continued to the bottom towards prerectal pouch. Both the ureters and superior rectal artery were identified and spared. The same procedure was done on the left side and dissection was completed by cutting the lateral attachments of the rectum. Up till now the procedure for the suture rectopexy and posterior mesh rectopexy was same.

Suture rectopexy: One stitch was taken on either side from lateral ligament of rectum and presacral fascia near sacral promontory with prolene 2/0 and then tied. Peritoneum over it was closed

Mesh rectopexy: Polypropylene mesh of 10 x 15cm was introduced and one of its end was fixed to the middle part

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of rectum while the other end was fixed to the sacral promontory. The peritoneum was then closed.

RESULTS

In total 42 patients underwent laparoscopic suture rectopexy and laparoscopic mesh rectopexy during the study period. Of these, 29 were females and 13 were males with a mean age of 43 years (range 20-65 years). Mean follow-up time was 17.5 months (range 2-36 months). 22 patients underwent laparoscopic suture

rectopexy and 20 patients underwent laparoscopic mesh rectopexy. There was no iatrogenic viscus injury in any case and no conversion to laparotomy. Post-operative symptoms are compared in Table 1.

There were 2 anovaginal fistulae diagnosed in the follow-up period in the mesh group. One patient had severe pain due to localised erosion of mesh and underwent a revision procedure to remove a mesh through an open procedure 14 months after in a 46 year old female

	Suture Rectopexy (n=22)	Mesh Rectopexy (n=20)	p-value
Mean Age	41.2	44.6	NA
Gender	16F, 6M	13F, 7M	NA
First stool (hours)	36.7 (18-60)	41.5 (19-70)	0.24
Constipation at final FU	5	15	0.001
Post operative pain (VAS score)	0.36 (0-3)	2.5 (0-7)	<0.001
Fistula formation	0	2	0.221
Revision procedure	0	1	0.476
Port site infection	2	2	0.659
Impotence	0	2	0.221
Recurrence	0	0	NA

DISCUSSION

Laparoscopy is becoming a popular mode of abdominal surgery including repair of rectal prolapse. Advantages include shorter surgical time, shorter inpatient length of stay, less postoperative pain, improved cosmesis and patient satisfaction⁶. Other benefits include better visualisation of the pelvic viscera in a confined space allowing for more accurate pelvic dissection thereby reducing the risk of damaging collateral structures. Laparoscopic surgery is becoming an effective mean of treating rectal prolapse due to its lower complication rate and improved outcomes⁷.

Laparoscopic suture rectopexy carries a better outcome when compared to mesh rectopexy in terms of post operative pain and constipation at final follow-up. Although not statistically significant, suture rectopexy patients also suffered less constipation at final follow-up. Previous studies have shown that the duration of operation and post-operative recovery is quicker with the suture rectopexy method⁸.

Use of a mesh carries its own complications and limitations that can be avoided with a simple suture method. Firstly, cost is a big implication factor in the decision to operate. Additionally, fixation of the mesh adds to the length of the operation^{8,9,10}. Although not statistically significant, in our mesh rectopexies we observed the only one case of revision due to mesh erosion and chronic pain. Mesh implants have been reported to occasionally cause such complications due to an intense inflammatory response and can erode through bowel wall sometimes requiring bowel resection^{11,12}. The other two complications that were noted in our study were fistula formation, port site infection and impotence, all of which were not statistically significant. The use of mesh implants has been associated with the formation of fistulae as well as dyspareunia^{13,14}. In our study, it is likely that the study numbers were too low to show a statistical difference – something that future studies could address with a larger number studies. It remains notable that the only complications seen in our study were

in the mesh group, in spite of remaining below statistical significance.

Our study has several strengths compared to similar studies already published. We had a relatively long follow up period ensuring that we capture all outcomes and complications. Additionally, we had very similar groups in terms of demographics ensuring that statistical comparison was valid. We ensured that a visual analogue scale (VAS) was used to record pain scores at each clinical visit to document improvement in pain symptoms.

CONCLUSION

We support the use of laparoscopic suture rectopexy over laparoscopic mesh rectopexy due to better outcomes in terms of less pain, less constipation and a lower complication rate.

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