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Original Article

OUTCOME OF LAPAROSCOPIC VERSUS OPEN ABDOMINAL RECTOPEXY FOR THE TREATMENT OF COMPLETE RECTAL PROLAPSE-OUR EXPERIENCE IN BANGABANDHU SHEIKH MUJIB MEDICAL UNIVERSITY

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Abstract

Background: Complete rectal prolapse is a very distressing condition. In adults, the only potentially curative treatment for complete rectal prolapse is surgery either by transabdominal or perineal approaches. Till date abdominal rectopexy is considered as the standard surgical treatment for complete rectal prolapse, which can be done laparoscopically or by open procedure.

Objective: The purpose of the study was to observe the outcome of Laparoscopic rectopexy in the treatment of complete rectal prolapse by subjective assessment and to compare the result with that of conventional open abdominal rectopexy.

Methodology: This randomized clinical trial was carried out in the Department of Surgery at Bangabandhu Sheikh Mujib Medical University, Dhaka, from July 2012 to June 2014 for a period of twenty four (24) months. Patients who presented with complete rectal prolapse with age ranging from 25 to 70 years irrespective of gender were selected as study population. Patients were randomized by lottery method into two groups as group I who underwent laparoscopic rectopexy (LR) and group II who underwent open rectopexy (OR).

Result: A total number of 50 patients were recruited in this study of which 25 patients were in group I and 25 patients were in group II. The mean (s.d.) age was 49.40 (13.22) years and 46.48(13.27) years in group I and group II respectively ($p>0.05$). The mean (s.d.) operative time was 115(19) minutes in group I and 75(12) minutes in group II ($p<0.05$). In this study 1(4.0%) patient and 6 (24.0%) patients had abdominal wound infection in group I and in group II respectively ($p>0.05$). Mean (s.d.) ambulation time was 1.96 (0.67) days in group I and 3.92(1.15) days in groups II ($p<0.05$). Postoperative hospital stay mean (s.d.) was 3.08(1.18) days in group I and 8.16(3.57) days in group II ($p<0.05$). Overall patients satisfaction were 92% and 76% in group I and group II respectively ($p>0.05$).

Conclusion: Laparoscopic rectopexy is a better option than conventional open abdominal rectopexy for the treatment of complete rectal prolapse.

Key Words: Rectal Prolapse, Laparoscopic Rectopexy, abdominal rectopexy.

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Introduction

Full-thickness rectal prolapse (FTRP) is the complete protrusion of the rectum through the anal canal[1]. It occurs at the extremes of age, the peak incidence is after the fifth decade and women are more commonly affected, representing 80% to 90% of patients with rectal prolapse[2].

There are certain risk factors for developing rectal prolapse which include the presence of an abnormally deep pouch of Douglas, the lax and atonic condition

of the muscles of the pelvic floor and anal canal, weakness of both internal and external sphincters[3]. Rectal prolapse may result in acute complications of the prolapse itself (pain, ulceration, bleeding, incarceration and gangrene) or chronic debilitating symptoms such as difficulty maintaining perianal hygiene like faecal incontinence or mucus discharge[4]. Straining may force the anterior wall of the upper rectum into the anal canal, perhaps causing a solitary rectal ulcer due to mucosal trauma[5].

The only potentially curative treatment for complete rectal prolapse is surgery. There are different surgical approaches to the prolapsed bowel like trans abdominal (open and laparoscopic) or perineal, and whether it is simply fixed like rectopexy or resecting a portion of pelvic colon or both and different synthetic materials used to perform the rectopexy[4]. The perineal approach has been reserved for the frail and elderly as general anesthesia and laparotomy can be avoided, whereas the abdominal approach is thought to provide a more robust repair with a lower recurrence rate[7]. An abdominal approach usually involves a rectopexy, with or without resection of the sigmoid colon. Currently laparoscopic surgery has emerged as a tool for the treatment of complete rectal prolapse and in particular is well suited for fixation rectopexy, because no specimen is removed and no anastomosis is required[6]. Laparoscopic rectopexy (LR) is superior to open rectopexy (OR) with regard to most short-term outcomes[8].

The purpose of this study is to compare the outcome of laparoscopic rectopexy with conventional open rectopexy for the treatment of complete rectal prolapse in terms of operative times, postoperative complications, early recovery, hospital stay and ultimate patients satisfaction.

Materials and methods:

This is a randomized clinical trial conducted over a period between July 2012 and June 2014 in the department of surgery of Bangabandhu Sheikh Mujib Medical University, Dhaka. Fifty consecutive patients with complete rectal prolapse with age ranging from 25 to 70 years irrespective of gender who got admitted for rectopexy were randomized into two groups as group I who underwent Laparoscopic abdominal rectopexy (LR) and group II who underwent Conventional open abdominal rectopexy (OR). Elderly frail patients, not fit for general anesthetics were excluded from the study. Informed written consent were obtained from all the patients.

Surgical Techniques

The patients who were enrolled in this study were explained the whole procedure of the study, about the nature of the disease, possible options of treatment as well as justification of surgical treatment. They were also explained about the possible complications of the operative procedure in postoperative period; in addition to that regular follow up after operation were also advised. After adequate preparation, group I patients underwent rectopexy by laparoscopic technique and group II underwent open abdominal procedure. In LR technique, 5 ports were made for placement of trocars and creation of pneumoperitoneum. After abdominal exploration and exclusion of other pathology, fixation of uterus to anterior abdominal wall was carried out in female patients. Dissection was carried along the line of Toldt and inferior mesenteric vessels were identified. Blunt dissection behind vascular stalk was carried out to enter the pelvic cavity and complete posterior mobilization of rectum was done along Waldeyers fascia upto pelvic floor. Extensive bilateral mobilization was avoided to minimize risk of autonomic nerve dysfunction. A polypropylene mesh was placed posterior to mobilized rectum and the implant was fixed to presacral fascia and sacral promontory with interrupted sutures by 2/0 polypropylene. Rectopexy was done by wrapping of implant around rectum on either side, leaving anterior one third of rectum free and fixed with 3-4 sutures by 3/0 polyglactin 910. Temporary uteropexy was released. After proper haemostasis, aponeurotic defects of 10mm port sites were closed with 1/0 polyglactin 910 and skin edges were apposed with subcuticular 3/0 ploy glactin 910.

In conventional open (OR) technique, lower midline incision was made to enter the abdominal cavity. After abdominal exploration and exclusion of other pathology, abdominal wall retractor was placed to expose left portion of colon. Next steps were exactly the same as for laparoscopic technique. After proper haemostasis, abdominal wound was closed with 1/0 polyglactin 910. Skin edges were apposed with skin

study median operative time is significantly less in laparoscopic group[8]. Longer operative time in our study may be attributed to several factors including our limited experience and expertise in operating with laparoscopic instruments.

Post operative complications are more common in open abdominal surgery. The difference between these two groups was statistically significant ($p<0.05$). This result is consistent with other studies. Similar study have mentioned that post operative complications are less among the laparoscopic patients than open surgery which is consistent with the present study[11].

A comparison of the degree of postoperative pain in both groups of the study subjects is recorded. The difference between these two groups was statistically significant ($p<0.05$). It is seen that degree of postoperative pain is less among the laparoscopic patients than open abdominal surgery patients. Similar to the present result, a study have mentioned that the degree of postoperative pain is less in case of laparoscopic surgery than open abdominal surgery[12].

Patients with laparoscopic procedure had earlier recovery in comparison to open group ($p<0.05$).Usually ambulation is earlier in laparoscopic surgery patients due to less tissue injury, less pain, early mobility which indicate that it is a better option for the surgical treatment of complete rectal prolapse. Similar result has been published and has mentioned that the open surgical operation can cause delayed recovery[13]. The reason may be due to the extent of injury inflicted by open abdominal surgery to the operative site. In another study it is observed that laparoscopic surgery leads to quicker recovery after operation than open surgery which is consistent with the present study[12].

A comparison of length of hospital stay in both groups of the study subjects was made. The difference between these two groups was statistically significant ($p<0.05$). The comparison of return to normal activity after operation in groups by study subjects is recorded. The difference between these two groups was statistically significant ($p<0.05$). This study reported that length of hospital stay is less in patients who underwent laparoscopic surgery than those with conventional open abdominal surgery. Early return to normal activities after laparoscopic surgery was due to less tissue injury and smaller wound sizes. Similar to the present result a study have reported that length of hospital stay among the patients subjected to laparoscopic surgery for complete rectal prolapse is less than the open abdominal surgery[14]. The reason of this may be due to less injury to the operative site. Another study reported that less hospital stay is required among the laparoscopic surgery patients which is similar to the present study[15]. A meta analysis has shown that the length of hospital stay compared with open abdominal rectopexy is significantly reduced in laparoscopic group[16]. In another study patients with complete rectal prolapse recovered earlier during laparoscopic surgery than open abdominal surgery which is consistent with the present study[17].

The comparison of patients' satisfaction in both groups of the study subjects was recorded. In group I (LR), maximum patients were satisfied after operation. In a re-meta analysis laparoscopic rectopexy is found safer and an effective modality of treatment for complete rectal prolapse[18]. Therefore it appears that Laparoscopic surgery is a safer and more effective way of treating patients with complete rectal prolapse.

Conclusion

This study permits to conclude that laparoscopic rectopexy is better than conventional open abdominal rectopexy for the treatment of complete rectal prolapse. Laparoscopic rectopexy significantly reduces the length of hospital stay, wound infection and post operative pain allowing early return to normal activities. Therefore we would like to recommend laparoscopic rectopexy for the treatment of complete rectal prolapse in otherwise fit patients.

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