

Original Article

Early Outcome of Laparoscopic Abdominoperineal Resection, Our Experience in Bangabandhu Sheikh Mujib Medical University

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Abstract :

Anorectal malignancies that require abdominoperineal resection (APR) is very common. Laparoscopic APR can be a better option. Laparoscopic APR has been seldom studied. This study aims to evaluate perioperative and early post-operative outcomes of laparoscopic APRs performed for the treatment of ano-rectal carcinomas. Patients operated for ano-rectal carcinoma between June 2011 to June 2013 in Bangabandhu Sheikh Mujib Medical University (BSMMU) were observed. Demographics, tumor and procedure-related parameters, perioperative results, early post-operative outcomes and survival were observed. Total 22 patients were under went laparoscopic APR. Male: Female ratio was 15:7 (68.18%: 31.82%). Age range was from 30-65 years with a mean age of 36.55 years. Mean operation time was 165 minutes and mean post-operative hospital stay was 6.8 days. Overall complication rate was 45.45%. Laparoscopic APR is a safe, effective and technically feasible procedure. It can be a better operative procedure than open APR.

Key words: Early outcome, Laparoscopic, Abdominoperineal resection.

Introduction :

Laparoscopic colorectal surgical techniques were first described in 1991 and have been applied to segmental resections, total colectomy, proctocolectomy, APR over the past decades^{1,2}. While the use of minimally invasive techniques was once restricted to benign colorectal conditions, the recent Clinical Outcomes of Surgical Therapy (COST) randomized, controlled trial has demonstrated the feasibility, oncologic adequacy and long-term safety of laparoscopy in malignant disease of

the colon³. This is in addition to well-characterized short and intermediate-term clinical benefits, including less post-operative pain and narcotic requirements, faster recovery of bowel function and shorter stay in hospital³⁻¹⁰. Despite these advantages, laparoscopic colorectal surgery remains one of the most challenging techniques to learn¹¹. The adoption of laparoscopy for colorectal surgery was slower to evolve than other laparoscopic procedures due to some early reports on metastatic port site recurrences following laparoscopy for colorectal cancer¹² coupled with the complex nature of these procedures. However, accumulated data in the last decade demonstrated that the actual rate of port site recurrences is below 1%, which is similar to the recurrence rate in the incision scar in open surgeries¹³. Moreover, prospective randomized studies have demonstrated that the long-term outcome after laparoscopic resection for colorectal cancer is comparable to that of the open approach^{14,15}. The recent conclusion of the oncologic debate together with the rapid development of technological means and the increase in public awareness will probably result in a substantial increase in the number of surgeons performing laparoscopic colorectal surgery. Nevertheless, laparoscopic colorectal operations are difficult to perform and necessitate advanced laparoscopic skills and considerable experience. The aim of this study was to evaluate the preoperative and early post-operative out-come of APR for ano-rectal malignancies.

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Materials and Methods :

From June 2011 we began to perform laparoscopic colorectal operations. From June 2011 to June 2013 we have performed 22 APRs in our colorectal surgery

unit of Bangabandhu Sheikh Mujib Medical University. Short-term data were prospectively collected. All operations were performed in the colorectal surgery unit of BSMMU. Surgeons had previous experience and training in laparoscopic surgery. Operative outcome related to complications, conversions, operative times were evaluated. Our preoperative workup for cancer patients included colonoscopy, tumor biopsies, computed tomography scan of the abdomen and pelvis (not all patients), chest X-ray and carcinoembryonic antigen blood level.

We performed laparoscopic APR by 5 ports. Two were 10mm and rests were of 5mm. One in umbilicus or just supra-umbilicus level (10mm), one in the right iliac fossa (10mm), one left iliac fossa (5mm), one in between umbilical and right iliac fossa (5mm) and another in between umbilical and left iliac fossa port (5mm). Patient was in Lithotomy position with head end lowered in position (trendelenburg position). Dissections were done by monopolar diathermy and mostly vessels were ligated by Hem-O-Lock clips. Dissection continued as far as possible deep to the pelvic cavity. Rest of the operation was done through perineal route. Specimens extracted through the perineal wound. Colostomy was done in the left side. Drain kept in the pelvic cavity through perineal wound.

Results :

The study included 15 (68.18%) males and 7 (31.82%) females. Age ranged between 30 to 65 years with a mean of 36.55 years. After appropriate pre-operative investigations and preparations, APR was performed. The mean operative time was 165 minutes. Six (27.27%) patients needed per-operative blood transfusion. Mean hospital stay was 6.8 days. Postoperative complications occurred in 10 patients (45.45%) (Table I). Perineal wound infection in 5 (22.73%), some form of voiding problems 2 (9.09%), stoma retraction 1 (4.54%), urethral injury 1 (4.54%), acid-base imbalance and left ureter injury 1 (4.54%). The mortality rate was 0%. There was no port related complication.

Table I : Complications

Complications	Number (Percentage)
Perineal Wound Infection	5(22.75%)
Voiding Problems	2(9.09%)
Stoma Retraction	1(4.54%)
Urethral injury	(")
Ureter injury	(")
Acid-Base disturbance	(")

Discussion :

Laparoscopic colorectal surgery is technically challenging. These procedures include various types of operations that frequently involve two or more abdominal quadrants, control of large blood vessels, identification of extraperitoneal structures such as the ureters, and intra- or extracorporeal reconstruction of intestinal continuity. Our overall results are comparable to other reported series in terms of morbidity and short-term outcome^{16,17}. Our complication rate (45.45%) was very high. It may be due to our lack of experience. Studies have demonstrated the impact of surgeon experience on complications, showing a significant decrease in the complications rate as experience is gained¹⁸⁻²⁰. Agachanet al²⁰ reported similar results and concluded that at least 50 procedures are necessary to lower the complication rate significantly. Another study by Bennett and coauthors¹⁸ demonstrated fewer complications with surgeons who had performed more than 40 cases.

Nevertheless, the number of operations is not the only factor influencing the complication rate. Other factors such as general experience in laparoscopic surgery, colonic pathology and type of procedure play a major role as well. Difficult procedures such as resection of low rectal tumors, severe diverticular disease, and more extensive operations such as subtotal colectomy increase the complication risk²⁰⁻²².

The operative time in laparoscopic colorectal surgery is somewhat longer than in open procedures even in experienced hands²³. Nevertheless, operative times do decrease along the learning curve as shown in different studies²⁴. We had zero conversion rates for APR.

As it was presented in previous comparative studies on laparoscopic colon or rectal cancer surgery, our data revealed that laparoscopy might decrease intraoperative bleeding and consequent necessity of transfusion²⁵⁻²⁷. However, current data described a longer operative time in laparoscopy which is parallel to the information in the literature²⁸.

In our study, there was a significant decrease in hospital stay in comparison to open surgery and this is similar to what was observed by Salimath and colleagues²⁹, that both return of bowel function and length of stay were shorter, which may indicate faster recovery after bowel surgery in patients undergoing the laparoscopic approach.

Polle and colleagues³⁰, showed that open colectomy has a negative impact on body image and cosmesis as compared with laparoscopy. Functional outcome, quality of life, and morbidity are similar for the two

approaches. The advantages of a long-lasting improved body image and cosmesis for this relatively young patient population may compensate for the longer operating times and higher costs, particularly for women.

Conclusion :

In conclusion, the evidence of the current study in comparison with studies in literature shows that laparoscopic APR is feasible and safe as it was associated with accepted postoperative time, less blood loss and low wound related complications, shorter hospital stays and low morbidity.

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