

OUR FIRST EXPERIENCE IN LAPAROSCOPIC COLORECTAL OPERATIONS

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ABSTRACT

PURPOSE: It has been almost 23 years since the first laparoscopic-assisted right hemicolectomy was done when the surgeons in our institution started doing laparoscopic colorectal operations mainly for malignant diseases. The aim of this communication was to present the beginning of the laparoscopic colorectal operations in St. Naum University Clinic of Surgical Diseases in Skopje, Macedonia.

MATERIAL AND METHODS: Twenty patients with colorectal adenocarcinoma were laparoscopically operated during the period from December 2012 to June 2013. Eleven of them were men and the rest women at a mean age of 58 years. Eight of them were rectal cancers, 3 were cancers of the rectosigmoid and the rest 9 were sigmoid adenocarcinomas. The patients were operated with 4 ports (sigmoid cancer) and 5 ports (rectum). Medial-to-lateral approach was used in all the cases. Tumour location dictated whether high or low ligation of inferior mesenteric artery (IMA) was done. Double stapler technique was applied for distal resection and anastomosis creation.

RESULTS: Mean operating time was 315 min. There were no perioperative and early postoperative deaths. One patient was reoperated early at the same operating day for mesenteric venous bleeding. There was one case of anastomotic leakage and a laparotomy was done with temporary colostomy. One unit of blood was given to five patients due to perioperative bleeding. Mean length of hospital stay was six days. Per oral nutrition started at day 2. Mean bowel function returned after 3,5 days. There were two seromas of the minilaparotomy wounds and no cases of surgical site infection. Selected cases of sigmoid and rectal cancer were suitable for beginning of learning the laparoscopic colorectal resection technique. The long operating time was understandable due to the steep learning curve.

CONCLUSION: Laparoscopic colorectal surgery is safe and oncologically routine surgical method. It is widely used for many benign colorectal diseases, too. Prolonged learning of this technique should not be discouraging.

Key words: *laparoscopic colorectal operation, colorectal adenocarcinoma, rectal cancer, sigmoid adenocarcinoma, medial-to-lateral approach*

INTRODUCTION

The first laparoscopic colon resections were 'laparoscopic-assisted' colectomies, i.e., mini-laparotomies were utilized for ligation of mesenteric vasculature, extracorporeal anastomoses,

and specimen removal. The first laparoscopic colonic resection using this technique was a right hemicolectomy accomplished by Moises Jacobs in Miami, Florida, in June, 1991 (9). Many other 'hand-assisted' colonic resection procedures were done in this fashion (1,4,8) as a bridge for moving to the next step - the totally laparoscopic colorectal resections. These operations offered many advantages comparing with the open colorectal procedures such as decreased postoperative ileus, pain, and disability as well, fewer pulmonary complications, improved cosmesis, shorter hospitalization, and reduced costs of care (6,11,13).

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However, laparoscopic colorectal operations are significantly more complicated than laparoscopic cholecystectomy and have a very steep learning curve (14). Adequate instruction, animal model experience, and proctoring by individuals skilled in advanced laparoscopic techniques are required to minimize complications and optimize patient's outcome.

It has been almost 23 years since the first laparoscopic-assisted right hemicolectomy was done when the surgeons in our institution started doing laparoscopic colorectal operations mainly for malignant diseases. Until then, cholecystectomy, appendectomy, diagnostic laparoscopy and organ biopsy, renal cysts and testicular varicocellae were the procedures done in laparoscopic fashion in our institution.

The aim of this communication was to present the beginning of the laparoscopic colorectal operations in St. Naum University Clinic of Surgical Diseases in Skopje, Macedonia on the example of 20 patients with malignant colorectal disease and to analyze their early postoperative period and ongoing following-up results.

MATERIAL AND METHODS

Twenty patients with colorectal adenocarcinoma were laparoscopically operated during the period from December 2012 to June 2013. Eleven of them were men and the rest women at a mean age of 58 years. Eight of them were rectal cancers, 3 were cancers of the rectosigmoid and the rest 9 were sigmoid adenocarcinomas. The patients were preoperatively diagnosed with colonoscopy and biopsy. A routine preoperative CT scan of the abdomen was done, too that was very useful in detecting the tumour size and its relations with the adjacent organs such as ureter, iliac vessels, and uterus when selecting the cases for laparoscopic operation. All the other cases with some kind of CT-verified invasion in other organ were excluded from this study and were operated with the open technique.

Bowel preparation was done with Fortrans solution in combination with rectal enema the night before surgery. Third generation of cephalosporine in a dose of 2 g i.v. in combination with metronidazole of 500 mg was given one hour before surgery. Four-trocar technique was used for sigmoid and rectosigmoid tumour localization while an additional fifth

suprapubic trocar was utilized for rectal cancer. We used 30° telescope. The patients were operated with 4 ports (sigmoid cancer) and 5 ports (rectum). Medial-to-lateral standardized approach was used (10,12). High or low ligation of the inferior mesenteric artery (IMA) was performed depending on the tumour localization. Ligation was done with Haemolok clips applied on the artery and the vein. Distal bowel deconnection was done with the Roticulator stapler device and then suprapubic transverse minilaparotomy was done for specimen extraction and for the insertion of the anvil. The laparotomy was then closed and a routine termino-lateral anastomosis was done with circular stapler device. Drainage was used always. In three cases, we did laparoscopic abdominoperineal amputation for low rectal cancer without a suprapubic laparotomy and perineal specimen extraction.

RESULTS

Mean operating time was 315 min. where the low rectal resections were longer.

There were no perioperative and early postoperative deaths. One patient was reoperated early at the same operating day for mesenteric venous bleeding. There was one case of anastomotic leakage and a laparotomy was done with temporary colostomy. There were two cases of conversion due to technical difficulties. One unit of blood was given to five patients due to perioperative bleeding. Mean length of hospital stay was six days in laparoscopic and converted cases excluding the patient with anastomotic leakage which stayed much longer. Per oral nutrition started at day 2. Mean bowel function returned after 3,5 days. There were two seromas of the minilaparotomy wounds and no cases of surgical site infection. All the patients are still followed-up routinely.

DISCUSSION

Selected cases of sigmoid and rectal cancer are suitable for beginning of learning the laparoscopic colorectal resection technique. Our long operating time is understandable due to the learning curve which is steep and requires much more cases comparing to the laparoscopic appendectomy and cholecystectomy. However, there are studies that give accent not on the shorter operating time, but on the percent of readmissions and complications as

much more important factors for the learning curve evaluation (2,5).

CONCLUSION

Laparoscopic colorectal surgery is safe and oncologically routine surgical method (3,7). It is widely used for many benign colorectal diseases, too. Prolonged learning of this technique should not be discouraging. Therefore we believe that every surgeon that starts learning this laparoscopic technique should pass some animal model training and train in an adequate laparoscopic institution. That is the only way for a surgeon to become a skilled colorectal laparoscopist.

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