

Laparoscopic colon resections – own experience report

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Abstract

Evolution of laparoscopic surgery has resulted in more and more operations within the abdominal cavity being done with minimally invasive techniques. The aim of the study was to summarize our own experience in laparoscopic colon resection. Material covers the period from October 2007 to September 2008. Results are comparable with the literature data. Conclusions from our work encourage wider application in laparoscopic colorectal surgery.

Key words: laparoscopy, colon resection, colon cancer.

Introduction

Recent years have seen rapid development of minimally invasive techniques. Due to its doubtless benefits, laparoscopy is applied more and more broadly in abdominal surgery. Its advantages include not only the cosmetic effect, but also less post-operative pain and shorter hospitalization and complete physical recovery time [1-6]. Fewer intra-abdominal adhesions were also confirmed after laparoscopic procedures and hence smaller risk of bowel obstruction in the long term [3, 7]. Total cost of therapy, including hospitalization and post-operative work absence, in laparoscopic surgery is comparable to or lower than traditional surgery. New tools and laparoscopic armamentarium, as well as surgeons' gaining of experience, lead to application of laparoscopy in both diagnosis and therapy of malignant tumours. Eighteen years have passed since the first colectomy for large bowel cancer (Jacobs in 1991) and now the minimally invasive technique is applied more often for treatment of cancer of the large intestine [8, 9]. In 2002 Lacy

published the results of 219 random patients and compared the results of laparoscopic versus open resection [2]. The multicentre COLOR trial results were published in the same year [7], and those of another multicentre trial, COST, in 2004 [3]. The results undoubtedly showed the oncological radicality of laparoscopic surgery to be comparable with open surgery while preserving all the advantages of laparoscopy. The consensus of the members of the 10th Congress of the European Association of Endoscopic Surgery (EAES) on 2 June 2002 in Lisbon was a serious argument in favour of laparoscopic procedures [4]. In 2004 the American Society of Colon and Rectum Surgeons published its official statement on laparoscopic resection of large bowel cancer, granting this method status comparable to open resection [8].

Material and methods

Laparoscopic surgery of the large intestine was initiated in the Department of General, Gastroenterological and Oncological Surgery of *Collegium*

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Medicum, Mikołaj Kopernik University in Toruń in October 2007. Forty-one patients were operated on between October 2007 and December 2008 (17 women and 24 men). Patients' age ranged from 51 to 87 years (mean 68.1). Twenty-one patients had rectal cancers, 10 of the sigmoid, 4 of the caecum, 3 of the ascending colon and 3 of the transverse colon (including one of the hepatic flexure). Stage of the disease was described according to the UICC scale: there were 4 patients (12%) in stage I, 19 (36%) in stage II, 17 (49%) in stage III and one patient in stage IV (3%). All procedures were performed under general anaesthesia with 5 or 6 trocars.

Results

Seventeen patients underwent anterior resection of the rectum (in two cases with loop ileostomy), four – abdominoperineal excision of the rectum, eight – right hemicolectomy, ten – left hemicolectomy and two – transverse colon resection. In two resections of rectum tumours decongestion ileostomy was performed for primary leak from the anastomosis. Both patients were re-operated after 3 months and continuity of the gastrointestinal tract was restored. Conversion to open surgery was necessary in 3 cases (7%). Altered anatomical conditions after previous laparotomy forced conversion in one patient. In another one there was a problem with tumour localization: it was described in the descending colon on colonoscopy, while during laparoscopy tumour of the transverse colon was found. The last patient needed conversion due to advanced cancer with infiltration involving the urinary bladder and spreading downwards. The patient finally required abdominoperineal resection.

No deaths were observed in the study group in the post-operative period. Mean duration of the laparoscopic procedure was 150 min (110-240 min) while the conventional one lasted 135 min (100-180 min). Average blood loss during laparoscopy was 220 ml (100-560 ml) and 400 ml (200-850 ml) in open procedure. Mean post-operative hospitalization time was 6.2 days (4-8) after laparoscopy and 8.3 days (6-17) after open surgery. Early complications developed in 3 patients. There were 2 leaks from the anastomosis (one after sigmoidectomy and another following anterior resection of the rectum). Both complications were treated with open re-inter-

vention with terminal colostomy on the descending colon. There was one infection of the operative wound at the site of the bowel and tumour removal from the abdominal cavity.

Discussion

Laparoscopic resection is now considered a feasible therapeutic option for patients with colorectal carcinoma. The results presented above are not different from those presented in available literature from other countries. Our conversion rate was 9%, while in large studies it was 5-25% [10-12]. Agachan in a non-selected group of patients states the conversion rate to be 21% [9, 13]. Tumour progression, difficult anatomy, intraperitoneal adhesions, insufficient mobilization of the large intestine and difficulty in performing a sufficiently radical oncological procedure are the main obstacles, responsible for conversion respectively in 5, 3, 3, 2 and 2% of patients. Oncological radicality is similar in both laparoscopic and conventional surgeries. Margins of resected tissue and number of removed lymph nodes are comparable [12]. Limitation of operative trauma with a few small incisions instead of one large, single incision allows faster patient mobilization and shortening of hospital stay after surgery. According to the literature and our experience, these patients also require less intense analgesia [3, 5, 7, 8, 10]. Complications after laparoscopy are comparable to those following classic procedures. Operative wound infection occurs definitely less often. There is however a group of complications attributable to gas insufflation, placement of Veress needle and trocars, characteristic of laparoscopy. Fortunately, these are relatively infrequent. Appropriate training of the operative team and possession of a harmonic scalpel or LigaSure are undoubtedly conditions for success of laparoscopic surgery of the large intestine.

Conclusions

Laparoscopic large bowel resection is a safe procedure. Complication rate and oncological radicality are similar to conventional surgery. Hospitalization time after laparoscopy is significantly shorter. Adequate training in laparoscopy of the whole operative team is a must for successful treatment.

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