TRATAMENTUL CHIRURGICAL VIDEOLOPAROSCOPIIC AL CANCERULUI DE COLON

REZUMAT
TEZĂ DE DOCTORAT

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CRAIOVA
2011
Investește în oameni!

FONDUL SOCIAL EUROPEAN

Programul Operațional Sectorial Dezvoltarea Resurselor Umane 2007-2013

Axa Prioritară: 1. Educația și formarea profesională în sprijinul creșterii economice și dezvoltării societății

Domeniul Major de Intervenție: 1.5. Programe doctorale și postdoctorale în sprijinul cercetării

Titlu proiect: "Sprijinirea tinerilor doctoranzi cu frecvență prin acordarea de burse doctorale"

Cod Proiect: POSDRU/6/1.5/S/8

Beneficiar: Universitatea de Medicină și Farmacie din Craiova
Introduction

In 2008, the incidence of colorectal cancer was ranked third among other types of cancer in the world regarding men (663,000 new cases and 10% of the total) and on the second position regarding women (571,000 cases, 9.4% of the total). 60% of the cases were recorded in the well developed countries. The highest incidence was reported in Australia / New Zealand and Western Europe, the lowest in Africa and Central and South Asia. Central and Eastern Europe was ranked on the 7th place in the world regarding the incidence.

In the last years in Romania there was a continuous increase of the incidence in colon cancer from 8.92 /0000 in 2000 to 15.76 /0000 in 2006. Prevalence increased from 41.91 /0000 in 2000 to 67.82 /0000 in 2006. Colon cancer mortality increased from 9.99 /0000 in 2000 to 13.55 /0000 in 2006.

The first laparoscopic surgery for colon cancer was performed by Cooperman in 1990 in the US. In Romania, the first laparoscopic assisted right hemicolectomy was performed in Cluj in 1995. Although the evolution of the laparoscopic surgery for colon cancer was slow, nowadays all types of colectomies can be performed laparoscopical but in small selected group of patients. A surgery type between laparoscopic and classic surgery can be performed by laparoscoical assisted colectomy, with the laparoscoical dissection and mobilization of the colon and the anastomosis performed outside the abdomen through the incision for the exteriorization of the resection piece

Laparoscopic colorectal surgery requires a higher degree of difficulty than the basic techniques due to several reasons: the need to work in more quadrans, difficult gestures to expose the operatory field, more difficult dissection procedures, ligatures of the important vascular pedicles and of course more difficult sutures and anastomoses. Technical progress in this area brought new technology for hemostasis, such as ultrasound dissection devices or for vascular sealing (LigasureR) for EndoGIA type mechanical sutures. The standardization of the techniques, more centers of excellence and training, distance learning opportunity and of course the Internet made this surgical technic approach to be so spreaded among surgeons. Colorectal surgery is nowadays performed in many surgery centers but the results are variable depending on experience of those centers
At this time, laparoscopic procedures can be performed in safe conditions without any deviation from the oncology principles. The benefits of the laparoscopic colectomy are: reduced postoperative pain, decreased incidence of postoperative ileus, a smaller number of hospitalization days, decreased incidence of parietal suppuration and a beneficial effect on cell-mediated immunity. Superior results of this surgical technic are also due to the reduced costs of hospitalization, to a faster socio-professional reintegration for the patient and a good long term quality of life.

Immediate or at distance parietal complications, such as post operatory eventrations, are decreased comparing to the classic surgery, although some studies say that this risk is similar. The biggest laparoscopic surgery disadvantage is the inability of hand detection and localization of small colon lesions.

Post operatory morbidity in laparoscopic surgery is comparable to conventional surgery. Specific complications of laparoscopic surgery may include: bowel thermal burn injuries, hypercapneea, ureteric lesions, trocar hernias, etc..

The risk of anastomotic fistula in laparoscopic assisted colectomy is the same as it is in the classic surgery.

**Materials and methods**

The study included patients diagnosed with colon cancer who were selected through certain criteria. There were formed 3 groups of patients:

Three groups of patients were formed:

Group I - called LAP (30 patients) - included patients that suffered a laparoscopic surgical procedure; this group of patients were provided by MD. Catalin Copăescu, general surgeon in the Surgery Clinic of the “St John Hospital”, Bucharest and cases from the Surgery Clinic I of the “Emergency County Hospital”, Craiova.

Group II - called OPEN (30 patients) - included patients that suffered a classical type of surgery exclusively provided by the Surgery Clinic of the “Emergency County Hospital”, Craiova and who were treated in a traditional manner including the perioperative care (pre, intra and post operatory) Including the first two groups, LAP and OPEN was done by a prospective manner, without randomization.
Group III - called OPEN-FT (30 patients) - included patients that suffered a classical type of surgery exclusively provided by the Surgery Clinic of the “Emergency County Hospital”, Craiova and who have received a perioperative care (pre, intra and postoperative) in a fast track manner, with a quicker rehabilitation.

Patients were included in the first two groups, LAP and OPEN, by a prospective manner, without randomization.

Preoperatory evaluation of all three groups patients consisted in:
- Complete clinical examination
- Dosage of the Carcino-Embryogenic antigen (C.E.A.)
- Liver function tests
- Hepatic ultrasound + / - CT,
- Total colonoscopy with biopsy,

In all patients scheduled for a laparoscopic procedure, was performed a barium radiography exam to determine the exact place of the lesion.

The inclusion of the colon cancer patients in the group with laparoscopic approach was made by the following criteria:
- Adenocarcinoma diagnosis;
- Elective surgery;
- Score A.S.A. (American Society of Anesthesiology) I-III;
- Age over 18 years;

Exclusion criteria were represented by the contraindications of the laparoscopy approach:
- Emergency surgery (intestinal obstruction, perforation);
- Body mass index (BMI) over 30 kg/m2;
- Preoperatory evidence of the extension of the tumor to adjacent organs;
- Patients with a history of colo-rectal surgery;

Patients from OPEN-FT group were selected from the “Surgery Clinic I” database by similar criteria with those from LAP group to make a “case-matched” type.

For OPEN-FT group, the selection criteria were the following:
- The diagnosis of uncomplicated colon cancer;
- Preoperatory autonomy of the patient;
- Patient Consent to participate in the study;
The appliance of at least 8 elements provided by the fast-track protocol;

Exclusion criteria:

- Complicated colon cancer diagnosis;
- The need to perform multivisceral resections due to the local extension of the disease;
- No preoperative autonomy of the patient;
- Patient refusal to participate in the study;
- The appliance of an insufficient number of elements of the protocol;

Surgery was performed to the patients by two groups of surgeons, a group experienced in advanced laparoscopic surgery techniques, which performed the laparoscopic intervention and another group with experience in conventional surgery, which performed surgery through classical methods.

The first study will be a contribution to the comparative study of the colorectal laparoscopic surgery vs. conventional surgery, which will be added to the already existing studies in the literature, for a further contribution to the accumulation of necessary data for meta-analysis studies that will eventually show the superiority of the laparoscopic colorectal surgery compared to open surgery, in terms of at least postoperative evolution, equivalence and oncological efficacy. Remains to further discussions the difficulty of the colorectal laparoscopic surgery that cannot be easily overcome as it is the case of the laparoscopic cholecystectomy or appendectomy that are basic techniques, especially with the oncology rigor.

The second study, regarding the results of laparoscopic surgery compared with open surgery with rehabilitation programs, will show whether there are differences or not in postoperative evolution of the patients. If there are no differences, than open surgery with rapid rehabilitation programs will be viable for situations where there are no available equipment and / or the needed expertise to perform oncological laparoscopic surgery.
Conclusions

Laparoscopic surgery represents an important option in the elective surgical treatment of colorectal cancer.

The advantages of using this type of approach are represented mainly by a faster postoperative recovery compared to open surgery patients, under the conditions of low conversion rates and with very comparable immediate postoperatory morbidity and mortality.

The postoperatory evolution of the patients with colon cancer elective laparoscopic surgery is superior to conventional surgery, recording less intensity and shorter duration of the postoperatory pain, lower fewer and infectious complications, faster mobilization, shorter hospitalization and faster restart of normal activities, aspects that have a positive influence to patient’s quality of life.

- There are no statistically significant differences in terms of quality of oncological extirpation of the cancer comparing to open surgery: primitive approach of the vessels, vascular ligature origin, endoluminal exclusion, minimal tumor manipulation, length of the tumor resected pieces, resection edges, number of lymph nodes collected for the histopathological examination, all of these are identical to conventional surgery.
- Our results show that elective laparoscopic surgery for colon cancer can be done in complete safety for the patient, with lower morbidity and lower frequency of complications compared to open surgery.
- Our study joins other similar studies, contributing to the continuous approach for validation of the laparoscopic colon cancer surgery as the reference technique or rather said as the elective approach for colon cancer.
- Fast track protocol represents a modern approach for colon cancer surgery, that involves optimizing the patient's perioperative management to reduce morbidity, to accelerate patient’s recovery after surgery and last but not least to reduce hospitalization days and costs.
- All elements that compose such concentrated and complex care protocols, are supported by scientific evidence obtained from randomized comparative trials with high statistical significance. Neither in our study nor in the literature could not be demonstrated a complete application, or rather a perfect compliance to all these measures. Applicability share of these
measures varies from one element to another, the main obstacle being habit and belief in tradition passed on from generation to generation and concepts like "test of time".

- The introduction of laparoscopy into the composition of a fast-track care protocol could, theoretically at least, improve further postoperative recovery of the patients. By the time our study was finished, there were already ongoing multicenter studies focused on answering this question, a final answer is clearly preserved for future research.
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