RESULTS OF LAPAROSCOPIC COLECTOMY FOR COLON CANCER AT 103 MILITARY HOSPITAL

Nguyen Van Xuyen*; Bui Tuan Anh*; Do Son Hai*

SUMMARY

Objectives: To evaluate the result of laparoscopic colectomy for colon cancer at 103 Military Hospital. Subjects and methods: The cross-sectional retrospective study was conducted on 139 patients who had colon cancer and treated by laparoscopic colectomy at Abdominal Surgery Department, 103 Military Hospital from 01 - 2007 to 12 - 2016. Results and conclusion: The mean age was 55.3 ± 14.2. The average duration of the disease 5.12 ± 2.05 months. Most tumors were in the sigmoid colon (38.85%). The majority were melanomas (76.26%) and all of them were epithelial carcinomas. Stages of carcinomas: Stage I: 15.11%; stage II: 25.18%; stage III: 59.71%. The ratio of laparoscopic procedures: Total colectomy 0.72%; right hemicolectomy 31.65%; transverse colectomy 15.11%; left hemicolectomy 3.6%; descending colectomy 10.07%; sigmoidectomy 38.85%. The average duration of surgery was 162.47 ± 31.61 minutes. Intraoperative complications 4.32%, early postoperative complications 5.76%, late postoperative complication 2.26%. Postoperative recurrence was 12.03%. Mortality 9.02%. Survival rates after 3 years and 5 years were 85.51% and 70.73%, respectively.

** Keywords: Colon cancer; Laparoscopic colectomy.*

INTRODUCTION

Colon cancer is a common disease in the world, especially in Western Europe and Northern America. Colon cancer is the second most common type of gastrointestinal cancer in Vietnam. The majority of colon cancer is epithelial carcinomas which progresses more slowly and is metastasized later than other types of cancer; therefore, early diagnosis and radical treatment would bring good prognosis. At 103 Military Hospital, laparoscopic colectomy was applied for colon diseases since 2004, has gained numerous encouraging results. However, there is no fully and systematically research summarizing all results of laparoscopic colectomy for colon cancer's treatment. In identifying above issues, we conducted this research aiming at: *Evaluating the results of laparoscopic colectomy for colon cancer at 103 Military Hospital.*

SUBJECTS AND METHODS

1. Subjects.

139 patients who had colon cancer and were treated by laparoscopic colectomy at the Abdominal Surgery Department, 103 Military Hospital from 01 - 2007 to 12 - 2016. All patients' documents including surgery records and after surgical anatomic pathology reports were saved, the patients were observed and examined after surgery.

** 103 Military Hospital*

Corresponding author: Do Son Hai (dosonhai.fr@gmail.com)

Date received: 10/06/2018

Date accepted: 01/08/2018

2. Methods.

Cross-sectional retrospective study.

RESULTS AND DISCUSSION

1. Gender and age.

Among 139 researched patients, there were 84 males (60.43%) and 55 females (39.57%). The male/female ratio was 1.5/1. The mean age was 55.3 ± 14.2. These data were matched with the findings in colon cancer by many other authors including To Quang Huy (2010) [3] and An - Gao (2010) [10]. Our study showed the positive correlation between colon cancer and patient age, the older the patients is, the higher risk they can get.

2. Clinical characteristics.

The duration of disease was less than 6 months (68.35%) with mean time of 5.12 ± 2.05 months. Our results are consistent with Vu Huy Hoa's (2014) [2]. The patients who came to hospital late were mainly in the period from 2007 to 2010. Most patients had semi-intestinal obstruction symptoms.

3. Colonoscopy.

The majority were melanomas (76.26%) causing the narrowing of the colon, which was similar to the majority of clinical semi-intestinal obstruction symptoms. The results were also equivalent to the statistics by Nguyen Anh Tuan (2011) [6] .

4. Characteristics of anatomy assessed during surgery.

** Tumor locations (n = 139):*

Cecum: 8 patients (5.75%); ascending colon: 36 patients (25.90%); transverse colon: 21 patients (15.11%); descending colon: 20 patients (14.39%); sigmoid colon: 54 patients (38.85%).

Tumors in sigmoid colon accounted for the largest proportion. Tumors in cecum made up the smallest proportion. This result was consistent with the study by An - Gao et al (2010) [10]. Tumor site was a significant factor driving laparoscopic colectomy method.

** Anatomical histopathology:*

Table 1:

TNM		Quantity (n = 139)	Proportion (%)
T	T_1	5	3.60
	T_2	31	22.30
	T_3	103	74.10
N	N_0	56	40.29
	N_1	41	29.49
	N_2	39	28.06
	N_3	3	2.16
M	M_0	139	100

Table 2: Disease staging according to TNM and Dukes.

Disease stage		Quantity	Proportion (%)
TNM	Dukes		
Stage I	A	21	15.11
Stage II	B	35	25.18
Stage III	C	83	59.71
Total		139	100

The majority of tumors were at stage T2 and T3 (accounting for 96.4%). The ratio of nodal metastases was 59.71%. Of all 139 studied patients, 40.29% of them were at stage I (Dukes A) and stage II (Dukes B); 59.71% of them were at stage III

(Duckes C) and noone was at stage Duckes D. Our result was matched with some authors', including Nguyen Thanh Tam (2009) [5], Mastalier B (2012) [8]. These patients were commonly characterized by their early detection of carcinomas.

** Microscopic results:*

All 139 patients' anatomic pathology results were epithelial carcinomas. Particularly, the most common type was well-differentiated epithelial carcinomas accounting for 54.68%. 11 cases were non-differentiated epithelial carcinomas, explaining 7.91%.

5. Features of laparoscopic colectomy for treatment of colon cancer.

** Surgical methods (n = 139):*

Total colectomy: 1 patient (0.72%); right hemicolectomy: 44 patients (31.65%); transverse colectomy: 21 patients (15.11%); left hemicolectomy: 5 patients (3.60%); descending colectomy: 14 patients (10.07%); sigmoidectomy: 54 patients (38.85%).

The number of patients treated with sigmoidectomy method was the highest. Total colectomy method was applied for only one case. Le Hoang Anh (2012) [1], Mastalier B (2012) [8] also found that sigmoidectomy accounted for the largest proportion, which was consistent with the distribution of colon, a kind of common sigmoid colon cancer.

** Surgical duration:*

According to our research, the average duration of surgery was 162.47 ± 31.61 minutes (the longest one was 350 minutes, the shortest one was 90 minutes). These results were equivalent to other studies'.

** Intraroperative complications:*

There were 6 cases (4.32%) having intraroperative complications, all were bleeding during surgery and were managed immediately. Our ratio of complication was equivalent to that in other authors' study such as Le Hoang Anh's (2012) [1], Ngo Quy Lam's (2010) [4] regardless of open colectomy.

6. Surgical results.

** Early results after surgery:*

- Early complications (n = 8):

Wound infection: 4 patients (2.88%); leakage: 2 patients (1.44%); bleeding: 1 patient (0.72%); residual abscess: 1 patient (0.72%).

Of all 139 patients, there were no cases of surgical mortality, the ratio of early complications was 5.76%. These cases were conservatively treated and discharged from hospital in a stable state of health. There was no case of surgical mortality. This result was equivalent to that by Mastalier B et al (2012) [8].

- The length of circulation recovery and hospital stay after surgery:

The average time of circulation recovery after surgery was 3.27 ± 1.08 days. The average length of hospital stay after surgery was 10.08 ± 2.13 days. The shortest time was 5 days, the longest one was 20 days. The patient with complication of surgical wound infection had the longest time of recovery. This result was equivalent to that of some authors such as Le Hoang Anh (2012) [1], Morneau (2013) [9]. Quick recovery after laparoscopic

colectomy has been studied by numerous Vietnamese and international authors. It shows the superiority of laparoscopic colectomy over classic open approach.

** Late results:*

By December 2016, we had received the information of 133/139 patients (95.68%) to examine the late results and evaluate prolonged survival time after surgery.

- Late complications after surgery:

Three cases (2.26%) had late complications of postoperative intestinal obstruction. The patients were hospitalized 3 months after surgery and required emergency colectomy. The cause of intestinal obstructions was colon cancer metastasis creating ligaments, which led to the choke. Afterwards, the patient's condition was stable, they were discharged without any postoperative complications, and are alive at the date of this research. According to Hai-Long Bai's study (2010), the ratio of complications that need to be re-operated in colon laparoscopic colectomy was 2.8% [7].

- Postoperative recurrence:

96/133 (72.18%) of the patients had colonoscopy after surgery. Postoperative recurrence was 12.03% with 16 patients. Among them, there were only 3 patients hospitalized to re-operate due to intestinal complication, one 68-year-old patient was detected with recurrence but did not go to the hospital, the other 12 patients died because of metastases.

** Recurrence detection time (RDT) collected with postoperative anatomic histopathology results:*

Table 3:

No. of patients (n = 16)	**RDT (months)**	**Anatomic histopathology results**		**Ratio (%)**
		TNM	Type of cancer	
3	6	T3N2M0	Non-differentiated epithelium	18.75
1	9	T3N2M0	Non-differentiated epithelium	6.25
1	17	T3N2M0	Poorly differentiated epithelium	6.25
1	17	T3N1M0	Poorly differentiated epithelium	6.25
2	20	T3N2M0	Poorly differentiated epithelium	12.5
1	28	T3N2M0	Partially differentiated epithelium	6.25
3	34	T3N2M0	Partially differentiated epithelium	18.75
1	46	T3N2M0	Poorly differentiated epithelium	6.25
2	48	T3N2M0	Poorly differentiated epithelium	12.5
1	51	T3N2M0	Partially differentiated epithelium	6.25

The anatomic histopathology result of 16 patients detected with postoperative recurrence was all cancer in stage III (with nodal metastases). Particularly, 4 patients

with the shortest recurrence time (6 and 9 months) featured non-differentiated epithelial carcinomas. The other 12 patients had partially and poorly differentiated epithelial carcinomas. This suggested that there was a correlation between postoperative recurrence and stage of disease as well as type of histopathological epithelium of cancer.

- Survival ratio:

Among 133 patients with updated information, there were 12 ones (9.02%) died, because of metastases.

Table 4:

	Length of living time after surgery (months)				
	6	12	24	36	60
Patients with full follow-up time	133	121	93	69	41
Patients that have been died	1	4	6	10	12
Alive patients	132	117	87	59	29
Survival ratio	99.25	96.69	93.55	85.51	70.73

The research results of survival rate after surgery in different times were shown in the table. The survival rate after 3 and 5 years of surgery were 85.51% and 70.73%, respectively.

The survival rate after 5 years of surgery is the criteria applied in most studies to assess the results of cancer treatment. Our survival rate after 5 years of surgery was similar with the authors' statistics such as To Quang Huy's (2010) [3] and Hai-Long Bai's [7]. Our results were higher than Ngo Quy Lam's (2010) [4] and Nguyen Thanh Tam's (2009) [5], where these patients were at stage IV (Duckes D). This suggested that the most important factor determining patients' survival after laparoscopic colectomy is the stage of cancer. The higher the stage is, the lower the survival rate is.

CONCLUSION

According to the research conducted on 139 patients who had colon cancer and treated by laparoscopic colectomy at 103 Military Hospital from 01 - 2007 to 12 - 2016, we draw some following conclusions:

- Indicate laparoscopic colectomy for colon cancer at stage I (15.11%), stage II (25.18%) and stage III (59.71%).

- Early postoperative complications: 5.76%, of which 2.88% surgical wound infection; 1.44% leakage; 0.72% bleeding, 0.72% residual abscess. No surgical mortality, the average postoperative circulation recovery time was 3.27 ± 1.08 days. The average length of hospital stay after surgery was 10.08 ± 2.13 days.

- Late results were examined on 133/139 patients (95.68%). Particularly,

2.26% of them had late complication of intestinal obstruction. The ratio of postoperative recurrence was 12.03%. The ratio of mortality was 9.02% (12 patients). The survival rate after 3 and 5 years of surgery were 85.51% and 70.73%, respectively. The ratio of survival and recurrence depended on cancer stage.

REFERENCES

1. Le Hoang Anh. Early complications and treatment for postoperative complications of laparoscopic colectomy for colon cancer. Level II-specialist Thesis. Military Medical University. Hanoi. 2012.

2. Vu Huy Hoa. Results of laparoscopic colectomy for sigmoid colon cancer at 108 Military Central Hospital. Master Thesis in Medicine. Military Medical University. Hanoi. 2014.

3. To Quang Huy, Nguyen Dai Binh, Bui Dieu. Five year long-term outcome after treatment of metastases on 158 cases of epithelial colon cancer Dukes B - C. Hochiminh City Medical News Journal. 2010, Vol 14, Appendix 4, pp.263-268.

4. Ngo Quy Lam. Several clinical, subclinical characteristics and the results of surgical treatment of metastases of sigmoid colon cancer at 103 Military Hospital. Master Thesis on Medicine. Military Medical University. Hanoi. 2010.

5. Nguyen Thanh Tam. Lymph nodes in colorectal cancer. PhD Thesis on Medicine. Military Medical University. Hanoi. 2009.

6. Nguyen Anh Tuan, Nguyen Hong Hai. Laparoscopic treatment for sigmoid colon and colorectal cancer. Journal of Clinical Medicine. 2011, Vol 6, Appendix 2, pp.102-108.

7. Bai H.L, Chen B, Zhou Y, Wu X.T. Five year long-term outcomes of laparoscopic surgery for colon cancer. World Journal of Gastroenterology. 2010, 16 (39), pp.4992- 4997.

8. Mastalier B, Tihon C, Simion S. Surgical treatment of colon cancer. Journal of Medicine and Life. 2012, 5 (3), pp.348-353.

9. Morneau M, Boulanger J, Charlebois P, Gervais N. Laparoscopic versus open surgery for the treatment of colorectal cancer. Canadian Journal of Surgery. 2013, 56 (5), pp.297-310.

10. Xu A.G, Yu Z.J, Jiang B, Wang X.Y, Zong X.H, Liu J.H, Lou Q.Y, Gan A.H. Colorectal cancer in Guangdong province of China: A demographic and anatomy survey. World Journal of Gastroenterology. 2010, 16 (8), pp.960-965.