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腹腔镜下完整系膜切除术治疗结肠癌的临床效果*

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摘要 目的:探讨腹腔镜下完整系膜切除术治疗结肠癌中的临床效果及安全性。**方法:**选取 2015 年 1 月至 2017 年 5 月在本院经纤维结肠镜及活组织病理检查确诊为结肠癌的患者作为研究对象, 并按照手术方式不同分为开腹手术组及腹腔镜手术组两组, 每组各选取 93 例。开腹手术组采用开腹完整结肠系膜结肠癌根治术进行治疗, 腹腔镜手术组采用腹腔镜下完整结肠系膜切除结肠癌根治术进行治疗, 比较两组的手术指标、术后并发症和手术质量。**结果:**与开腹手术组比较, 腹腔镜手术组手术时间延长, 术中出血量减少, 术后排气时间缩短, 术后引流管拔管时间缩短, 住院时间缩短($P<0.05$)。腹腔镜手术组术后并发症总发生率(20.43%)显著低于开腹手术组(35.48%)($P<0.05$); 切口相关感染发生率(1.08%)明显低于开腹手术组(6.45%), 但差异无统计学意义($P>0.05$); 总感染发生率(11.83%)低于开腹手术组(30.11%)($P<0.05$)。腹腔镜手术组与开腹手术组均达到完整系膜切除标准, 肿瘤组织、系膜等均整块完整切除且系膜未发现损伤, 切除标本质量分级达到 C 级及以上, 切除肠管均距离恶性肿瘤上缘 10 cm、下缘 15 cm, 且对切除肠管上切缘及下切缘的病理组织学检查结果均未发现恶性肿瘤细胞。腹腔镜手术组与开腹手术组在清扫淋巴结数量、肿瘤 TNM 病理分期方面比较均未发现具有统计学差异($P>0.05$)。腹腔镜手术组肿瘤大小明显小于开腹手术组($P<0.05$)。**结论:**腹腔镜下完整系膜切除术治疗结肠癌的手术创伤小, 可降低术后并发症发生率, 但手术时间还有待优化, 应用指征还有待进一步拓宽。

关键词:腹腔镜; 完整系膜切除术; 结肠癌

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Clinical Application of Laparoscopic Complete Mesocolic Resection for Colorectal Cancer*

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ABSTRACT Objective: To explore the application of laparoscopic complete mesocolic resection for colorectal cancer. **Methods:** Patients with colorectal cancer confirmed by colonoscopy and biopsy diagnosis from January 2015 to May 2017 in our hospital were selected as the research object, and randomly divided into the laparotomy group and the laparoscopic surgery group according to the different methods of operation, 93 cases in each group. The open surgery group was given open radical resection of colorectal with complete membrane colorectal cancer, laparoscopic surgery group was given complete mesocolic laparoscopic resection of colorectal cancer radical treatment, the operation indexes, postoperative complications and surgical quality. of the two groups were compared. **Results:** Compared with the open surgery group, the operation time prolonged, intraoperative bleeding decreased, postoperative exhaust time, drainage time and hospitalization time were shortened, postoperative drainage volume reduced in the laparoscopic surgery group($P<0.05$). The postoperative complication rate (20.43%) was lower in the laparoscopic surgery group than the laparotomy group (35.48%)($P<0.05$); the incision related infection rate was 1.08% (1/93) was lower (6.45%) with no statistically significant difference ($P>0.05$); the sense hair coloring birth rate (11.83%) was lower than that of the laparotomy group (30.11%)($P<0.05$). Laparoscopic group and open surgery group achieved complete resection, tumor tissue, mesangial are whole complete resection and mesangial resection specimens showed no damage, quality grade reaches C grade and above, cut in addition to intestinal malignant tumors were from 10 cm to the edge of the lower edge, 15 cm and the margin and margin of resection on histopathological examination results were not found in malignant tumor cells. Laparoscopic group and open surgery group in the number of dissected lymph nodes, tumor staging and pathological aspects of TNM showed no statistically significant difference ($P>0.05$), the tumor size of laparoscopic surgery group was lower than that of the open surgery group ($P<0.05$). **Conclusion:** Laparoscopic complete mesocolic resection can significantly reduce the amount of bleeding, postoperative exhaust time, postoperative drainage, drainage time and hospitalization time, reduce the incidence of postoperative

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complications in the treatment of colorectal cancer, but the operation time remains to be optimized, application indication should be further widened.

Key words: Laparoscopic; Complete mesocolic resection; Colorectal cancer

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前言

近年来,随着经济社会的飞速发展,人们生活水平的提高,生活方式及饮食结构的改变,环境污染的加剧,食品卫生问题频现,再加上人口老龄化的进展,结肠癌的发病率越来越高^[1]。2016年,我国恶性肿瘤发病和死亡分析数据显示我国的结肠癌发病率在全部恶性肿瘤中排名第四位,死亡率则居全部恶性肿瘤死亡原因第五位^[2-3]。目前,手术治疗仍然是根治结肠癌的重要手段,开腹或者腹腔镜下完整结肠系膜切除术是目前推荐使用的标准手术方法^[4]。本研究主要探讨了腹腔镜下完整结肠系膜切除术在结肠癌中的应用效果,以期为临床治疗提供理论依据。

1 材料与方法

1.1 研究对象

回顾性选取2015年1月至2017年5月在本院经纤维结肠镜及活组织病理检查确诊的结肠癌患者作为研究对象。纳入标准:均经纤维结肠镜及活组织病理检查确诊为结肠癌^[5];患者术前检查的TNM分期为I~III期^[6];术前均没有进行任何治疗,为首次确诊的结肠癌患者,且可以耐受手术;患者行影像学检查核实可以进行手术切除治疗。排除标准:合并其他部位恶性肿瘤细胞转移的患者;曾经有腹部手术治疗史;具有心、肝、肾、肺等重要器官功能及血液系统功能障碍而不能耐受手术的患者;临床资料不完整的患者。纳入研究的结肠癌患者均签署知情同意书,并按照手术方式不同分为开腹手术组及腹腔镜手术组两组,每组各选取93例。开腹手术组采用开腹完整结肠系膜结肠癌根治术进行治疗,其中男性59例,女性34例,平均年龄 (65.12 ± 12.90) 岁,对结肠癌患者进行TNM分期,分为I期5例,II期39例,III期49例;根据肿瘤分化程度划分,分为低分化7例,中分化66例,高分化20例;根据肿瘤部位划分,分为右半结肠癌30例,左半结肠癌21例,乙状结肠癌42例。腹腔镜手术组采用腹腔镜下完整结肠系膜切除结肠癌根治术进行治疗,其中男性59例,女性34例,平均年龄 (65.70 ± 13.80) 岁,对结肠癌患者进行TNM分期,分为I期8例,II期43例,III期42例;根据肿瘤分化程度划分,分为低分化10例,中分化65例,高分化18例;根据肿瘤部位划分,分为右半结肠癌28例,左半结肠癌22例,乙状结肠癌43例。两组研究对象的性别、年龄、TNM分期、肿瘤分化程度、肿瘤部位比较差异均无统计学意义($P > 0.05$),具有可比性。

1.2 手术方法

开腹手术组及腹腔镜手术组两组均采用相同的术前准备及营养支持,均采用气管插管复合全身麻醉。手术时开腹手术组采用开腹完整结肠系膜结肠癌根治术进行治疗,先根据肿瘤所在的位置选择手术切口位置,根据手术切口位置选择在腹直

肌左侧缘或者右侧缘或者腹中线12~20 cm处切开,逐层分离进入腹腔内,先进行手术探查肿瘤位置、范围,肿瘤和邻近组织器官的关系,确定肠管需要切除的范围及长度,有无腹水产生,有没有腹腔其他部位的转移,然后进行手术切除,并进行组织周围淋巴结的清扫。腹腔镜手术组采用腹腔镜下完整结肠系膜切除结肠癌根治术进行治疗,先根据肿瘤所在的位置选择戳孔位置,Torcar穿刺建立人工气腹,将腹内压控制在12~14 mmHg,然后将观察镜放置入腹腔内,在腹壁戳孔放置抓钳等医疗器械,在观察镜的辅助下先进行手术探查肿瘤位置、范围,肿瘤和邻近组织器官的关系,确定肠管需要切除的范围及长度,有无腹水产生,有没有腹腔其他部位的转移,然后以回结肠血管投影为标志,进行脏器筋膜和壁层筋膜的分离,从而到达Toldt's间隙,将结肠系膜打开并将肠管按照顺时针方向进行扭转,暴露结肠系膜上动静脉血管,并对结肠血管进行分离解剖,夹闭并离断供血血管根部,同时对血管根部的淋巴结进行清扫,对结肠系膜和周围网膜韧带进行切除以达到全结肠系膜切除的要求,随后分离肠管,将腹壁戳孔扩大到4~8 cm以拉出肠管,在恶性肿瘤上缘10 cm、下缘15 cm处进行肠管切除,然后将肠管行端端吻合并放置于腹腔,关腹并再次建立气腹,冲洗腹腔、放置引流管。开腹手术组及腹腔镜手术组两组切除的标本均进行病理组织学检查。

1.3 观察指标

观察开腹手术组及腹腔镜手术组两组的手术指标:手术时间、术中出血量、术后排气时间、术后引流量、引流管拔管时间、住院时间;术后并发症:吻合口瘘、吻合口渗血、切口感染、泌尿感染、腹部感染、肺部感染等,手术质量评估:对切除标本质量分级、切除系膜的平面和完整性、肠管切除长度、清扫淋巴结数量、肿瘤TNM病理分期、切除肠管上缘、下缘病理检查结果进行核查。

1.4 统计学分析

调查问卷数据采用Epi Data 3.0软件进行录入,核对无误以后采用SPSS 20.0统计软件包进行统计分析。计量资料采用均数 $\pm$ 标准差($\bar{x} \pm s$)表示,其比较采用方差分析;计数资料采用例数(百分比)表示,比较采用卡方(χ^2)检验,以 $P < 0.05$ 为差异具有统计学意义。

2 结果

2.1 开腹手术组及腹腔镜手术组手术指标的比较

与开腹手术组比较,腹腔镜手术组手术时间延长,术中出血量、术后引流量明显减少,术后排气时间、引流管拔管时间、住院时间显著缩短($P < 0.05$),见表1。

2.2 开腹手术组及腹腔镜手术组术后并发症的发生情况比较

本研究中两组患者术后均有并发症,腹腔镜手术组术后出现5例吻合口瘘,3例吻合口渗血,1例切口感染,1例泌尿感

表 1 开腹手术组及腹腔镜手术组术后手术指标的比较

Table 1 Comparison of the postoperative index between the open surgery group and laparoscopic operation group

Postoperative indexes	Open surgery Group (93 cases)	Laparoscopic operation Group (93 cases)	F value	P value
Operative time(min)	133.80± 25.75	151.70± 21.80	5.116	0.000
Intraoperative bleeding volume(mL)	230.50± 70.82	80.65± 62.60	15.289	0.000
Postoperative exhaust time(h)	5.15± 1.02	3.02± 1.05	14.032	0.000
Postoperative drainage(ml)	325.46± 115.59	184.55± 101.80	8.822	0.000
Tubation time of drainage tube(d)	12.03± 2.50	7.93± 2.26	11.732	0.000
In hospital time(d)	16.85± 2.08	11.50± 2.15	14.247	0.000

染,2例腹部感染,7例肺部感染;开腹手术组术后出现5例吻合口瘘,6例切口感染,3例泌尿感染,4例腹部感染,15例肺部感染。腹腔镜手术组术后并发症总发生率(20.43%)低于开腹手术组(35.48%)($P<0.05$);腹腔镜手术组切口相关感染发生率(1.08%)低于开腹手术组(6.45%),但未发现具有统计学差异($P>0.05$);腹腔镜手术组总感染发生率(11.83%)低于开腹手术组(30.11%),且差异具有统计学意义($P<0.05$),见表2。

表 2 开腹手术组及腹腔镜手术组术后并发症发生情况的比较[n(%)]

Table 2 Comparison of the incidence of postoperative complications between open operation group and laparoscopic operation group[n(%)]

Postoperative complications	Open surgery group (93 cases)	Laparoscopic operation Group (93 cases)	P value
Anastomotic fistula	5(5.38)	5(5.38)	1.000
Anastomotic leakage	0(0)	3(3.23)	0.244
Infection of incisional wound	6(6.45)	1(1.08)	0.123
Urinary infection	3(3.23)	1(1.08)	0.613
Abdominal infection	4(4.30)	2(2.15)	0.678
Pulmonary infection	15(16.13)	7(7.53)	0.069
Total	33(35.48)	19(20.43)	0.022

2.3 开腹手术组及腹腔镜手术组的手术质量比较

腹腔镜手术组与开腹手术组均达到完整系膜切除标准,肿瘤组织、系膜等均整块完整切除且系膜未发现损伤,切除标本质量分级达到C级及以上,切除肠管均距离恶性肿瘤上缘10cm、下缘15cm,且对切除肠管上切缘及下切缘的病理组织学

检查结果均未发现恶性肿瘤细胞。腹腔镜手术组与开腹手术组在清扫淋巴结数量、肿瘤TNM病理分期方面比较均无统计学差异($P>0.05$),腹腔镜手术组肿瘤大小小于开腹手术组且具有统计学差异($P<0.05$),见表3。

表 3 开腹手术组及腹腔镜手术组手术质量的比较

Table 3 Comparison of the surgical quality between open surgery group and laparoscopic operation group

Surgical quality	Open surgery Group (93 cases)	Laparoscopic operation Group (93 cases)	F/ χ^2 value	P value
Tumor size(cm)	5.25± 1.96	3.82± 2.01	4.912	0.000
Number of lymph nodes dissected (number)	16.36± 5.05	15.05± 5.10	1.760	0.080
TNM pathological staging(cases)			1.426	0.490
I	5(5.38)	8(8.60)		
II	39(41.94)	43(46.24)		
III	49(52.69)	42(45.16)		

3 讨论

手术治疗是根治结肠癌的重要治疗手段,开腹或者腹腔镜

下完整结肠系膜切除术是目前推荐使用的标准手术方法,但是开腹手术创口大,术中、术后出血量大,术后需要的恢复时间比较长,并发症的发生率也高,在一定程度上影响了其发展^[9]。近

年来,随着微创技术的飞速发展,腹腔镜技术日益精进,在结肠癌手术中发挥重要的作用^[10]。本研究对腹腔镜下完整系膜切除术在结肠癌中的应用效果进行了探讨。

本研究结果显示与开腹手术组比较,腹腔镜手术组手术时间延长,术中出血量减少,术后排气时间缩短,术后引流量减少,引流管拔管时间缩短,住院时间缩短,所以腹腔镜下完整结肠系膜切除术虽然手术时间比开腹手术延长,但是手术时间延长并没有增加术中出血量、术后排气时间、术后引流量、引流管拔管时间及住院时间,这和 Nakajima 等人^[11]的研究结果一致。因此,腹腔镜手术在术中出血量、术后排气时间、术后引流量、引流管拔管时间及住院时间方面优于开腹手术。

术后并发症对于患者的术后康复、生活质量及围手术期生存率等都会产生不良影响^[12-14]。本研究结果显示腹腔镜手术组与开腹手术组术后均有并发症,腹腔镜手术组术后出现 5 例吻合口瘘,3 例吻合口渗血,1 例切口感染,1 例泌尿感染,2 例腹部感染,7 例肺部感染;开腹手术组术后出现 5 例吻合口瘘,6 例切口感染,3 例泌尿感染,4 例腹部感染,15 例肺部感染。腹腔镜手术组术后并发症总发生率 (20.43%) 低于开腹手术组 (35.48%),腹腔镜手术组切口相关感染发生率 1.08%(1/93)低于开腹手术组 6.45%(6/93),腹腔镜手术组总感染发生率 11.83%(11/93)低于开腹手术组 30.11%(28/93),这与国内外腹腔镜应用结果一致^[15-20]。因此,腹腔镜手术虽然时间延长,但是由于其操作更加精细化,创口小,能够有效降低并发症的发生,使得患者可以尽快恢复,同时也说明腹腔镜技术操作及熟练程度还有待进一步提高。随着腹腔镜技术操作及熟练程度的进一步提高,腹腔镜手术时间有可能和开腹手术时间接近甚至短于开腹手术时间^[21-24]。

手术质量是评估腹腔镜下完整系膜切除术在结肠癌中的应用效果的重要指标^[25]。本研究结果显示两组患者均达到完整系膜切除标准,肿瘤组织、系膜等均整块完整切除且系膜未发现损伤,切除标本质量分级达到 C 级及以上,切除肠管均距离恶性肿瘤上缘 10 cm、下缘 15 cm,且对切除肠管上切缘及下切缘的病理组织学检查结果均未发现恶性肿瘤细胞。腹腔镜手术组与开腹手术组在清扫淋巴结数量、肿瘤 TNM 病理分期方面比较均未发现具有统计学差异,腹腔镜手术组肿瘤大小小于开腹手术组且具有统计学差异,根据 2008 年版的腹腔镜结肠直肠癌操作指南要求肿瘤大小超过 6 cm 为腹腔镜手术的禁忌症,但是本研究中首次选择了 5 例肿瘤大小超过 6 cm、没有肿瘤黏连的患者进行了腹腔镜手术,手术顺利而且术后恢复较好,所以目前腹腔镜手术的应用禁忌还比较多,限制了其临床应用^[26-30]。随着腹腔镜技术的发展,其应用指征还有待进一步拓宽。

综上所述,腹腔镜下完整系膜切除术在结肠癌治疗中可以明显减少术中出血量、术后排气时间、术后引流量、引流管拔管时间及住院时间,降低术后并发症发生率,但手术时间还有待优化,应用指征还有待进一步拓宽。

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