

- meta-Analysis[J]. Critical care medicine, 2014, 42(3): 625-631
- [7] Dellinger RP, Levy MM, Rhodes A, et al. Surviving sepsis campaign: International guidelines for management of severe sepsis and septic shock, 2012[J]. Intensive care medicine, 2013, 39(2): 165-228
- [8] 董宏艳, 刘先华, 周智勇, 等. 降钙素原和 APACHE II 评分对老年脓毒症患者病情判断及预后评估的研究 [J]. 实用老年医学, 2015, 29(6): 457-460  
Dong Hong-yan, Liu Xian-hua, Zhou Zhi-yong, et al. Research on assessment value of procalcitonin and APACHE II in elderly patients with sepsis[J]. Pract Geriatr, 2015, 29(6): 457-460
- [9] Yaroustovsky M, Abramyan M, Krotenko N, et al. Combined extracorporeal therapy for severe sepsis in patients after cardiac surgery[J]. Blood purification, 2014, 37(1): 39-46
- [10] Cré mieux AC, Saleh-Mghir A, Danel C, et al.  $\alpha$ -hemolysin, not panton-valentine leukocidin, impacts rabbit mortality from severe sepsis with methicillin-resistant Staphylococcus aureus osteomyelitis [J]. J Infect Dis, 2014, 209(11): 1773-1780
- [11] Mokart D, Slehofer G, Lambert J, et al. De-escalation of antimicrobial treatment in neutropenic patients with severe sepsis: Results from an observational study[J]. Intensive care medicine, 2014, 40(1): 41-49
- [12] Boissier F, Katsahian S, Razazi K, et al. Prevalence and prognosis of cor pulmonale during protective ventilation for acute respiratory distress syndrome [J]. Intensive care medicine, 2013, 39 (10): 1725-1733
- [13] Aziz M, Jacob A, Yang W L, et al. Current trends in inflammatory and immunomodulatory mediators in sepsis [J]. J Leukoc Biol, 2013, 93(3): 329-342
- [14] 孙鸿鹏, 张谦, 周厚荣, 等. 脓毒症并 ARDS 患者 Sonoclot 凝血功能检测的研究[J]. 贵州医药, 2016, 40(1): 19-21  
Sun Hong-peng, Zhang Qian, Zhou Hou-rong, et al. Sonoclot blood coagulation function detection in patients with sepsis and ARDS[J]. Guizhou Medical Journal, 2016, 40(1): 19-21
- [15] 高戈, 冯喆, 常志刚, 等. 2012 国际严重脓毒症及脓毒性休克诊疗指南[J]. 中华危重病急救医学, 2013, 25(8): 501-505  
Gao Ge, Feng Zhe, Chang Zhi-gang, et al. International guidelines for diagnosis and treatment of severe sepsis and septic shock in 2012[J]. Chin Crit Care Med, 2013, 25(8): 501-505
- [16] Farris RW., Weiss NS, Zimmerman JJ, et al. Functional outcomes in pediatric severe sepsis: Further analysis of the researching severe sepsis and organ dysfunction in children: A global perspective trial[J]. Pediatr Crit Care Med, 2013, 14(9): 835-842
- [17] Mann-Salinas EA, Baun MM, Meininger JC, et al. Novel predictors of sepsis outperform the american burn association sepsis criteria in the burn intensive care unit patient [J]. J Burn Care Res, 2013, 34(1): 31-43
- [18] 牟洪宾, 王海霞, 刘昌华, 等. 脓毒症合并急性肾损伤患者的临床特点与预后[J]. 海南医学院学报, 2013, 19(12): 1694-1696  
Mou Hong-bin, Wang Hai-xia, Liu Chang-hua, et al. Clinical characteristics and prognosis in patients with septic and acute kidney injury [J]. Journal of Hainan Medical University, 2013, 19 (12): 1694-1696
- [19] Cohen J, Vincent JL, Adhikari NKJ, et al. Sepsis: a roadmap for future research[J]. Lancet Infect Dis, 2015, 15(5): 581-614
- [20] Zhong JZ, Wei D, Pan HF, et al. Colloid solutions for fluid resuscitation in patients with sepsis: Systematic review of randomized controlled trials[J]. The Journal of Emergency Medicine, 2013, 45(4): 485-495
- [21] Myburgh J, McIntyre L. New insights into fluid resuscitation [J]. Intensive care medicine, 2013, 39(6): 998-1001
- [22] 龚平, 康健, 冯薇, 等. 胸阻抗法无创血流动力学监测指导心肺复苏后血管活性药物的应用 [J]. 大连医科大学学报, 2013, 35(05): 455-457  
Gong Ping, Kang Jian, Feng Wei, et al. Application of noninvasive hemodynamic monitoring of the thoracic impedance method for the detection of vasoactive drugs after cardiopulmonary resuscitation [J]. Journal of Dalian Medical University, 2013, 35(05): 455-457

(上接第 1349 页)

- [14] Henriksen NA, Mortensen JH, Sorensen LT, Bay-Jensen AC. The collagen turnover profile is altered in patients with inguinal and incisional hernia[J]. Surgery, 2015, 157(2): 312-321
- [15] Lamm SH, Steinemann DC, Linke GR. Total inverse transgastric resection with transoral specimen removal [J]. Surg Endosc, 2014, 12 (25): 7-8
- [16] Ke L, Tong Z, Ni H, et al. The effect of intra-abdominal hypertension incorporating severe acute pancreatitis in a porcine model [J]. PLOS One, 2012, 7(3): e33125

- [17] Khiangte E, Newme I, Patowary K, et al. Single-port laparoscopic cholecystectomy in situ versus totalis using the E.K. glove port[J]. J Minim Access Surg, 2013, 9(4): 180-182
- [18] 王大东, 许勇, 韩明明, 等. 腹腔镜胆囊切除术中 Rouviere 沟引导定位的临床应用价值 [J]. 现代生物医学进展, 2015, 15 (22): 4303-4305  
Wang Da-dong, Xu Yong, Han Ming-ming, et al. Clinical Application Value of Rouviere Groove Positioning in the Laparoscopic Cholecystectomy[J]. Progress in Modern Biomedicine, 2015, 15(22): 4303-4305

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# 腹腔镜胆囊手术和开腹胆囊手术对术后肠黏连的影响比较

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**摘要 目的:**比较腹腔镜胆囊手术和开腹胆囊手术对于术后肠黏连的影响,对比两种手术的有效性和安全性。**方法:**回顾选取在我院接受胆囊手术治疗的196例病患,根据术式分成开腹组和腹腔组,每组均为98例患者,对比分析组间手术指标以及术后出现肠黏连的情况,同时观察手术前后患者消化道生存质量变化。**结果:**腹腔镜组手术耗时( $123.57 \pm 4.65$  min)长于开腹组,术中出血( $27.52 \pm 5.69$  mL)、胃肠功能恢复用时( $18.03 \pm 3.51$  h)、术后住院时间( $4.51 \pm 1.03$ )、肠黏连发生率(10.20%)少于开腹组,( $P < 0.05$ );两组术前GLQI评分相仿( $P > 0.05$ ),术后GLQI评分显著高于组内术前( $P < 0.05$ ),且腹腔镜组术后GLQI评分显著高于开腹组( $P < 0.05$ )。**结论:**与开腹手术相比,腹腔镜胆囊手术不仅手术创伤小、术后恢复时间短,而且术后肠粘连发生率低,值得推广。

**关键词:**腹腔镜胆囊手术;开腹胆囊手术;肠黏连

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## Comparison of the Effects of Laparoscopic Cholecystectomy and Open Laparotomy Cholecystectomy on Postoperative Intestinal Adhesion

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**ABSTRACT Objective:** To compare the clinical effects of laparoscopic cholecystectomy and open laparotomy cholecystectomy on postoperative intestinal adhesion, and to compare the effectiveness and safety of the two procedures. **Methods:** 196 patients with cholecystectomy in our hospital were retrospectively chosen. According to the operative procedure, they were divided into two groups: open laparotomy group and abdominal cavity group, and 98 cases in each group. The operative indexes and postoperative intestinal adhesion of the two groups were compared, and the changes of quality of life of patients with gastrointestinal tract before and after surgery were observed. **Results:** The laparoscopic operation time ( $123.57 \pm 4.65$  min) was longer than that in the open laparotomy group, bleeding during operation ( $27.52 \pm 5.69$  mL), recovery of gastrointestinal function time ( $18.03 \pm 3.51$  h), postoperative hospital stay ( $4.51 \pm 1.03$ ) and intestinal adhesion rate (10.20%) were less than the open laparotomy group, ( $P < 0.05$ ). The GLQI scores of the two groups before surgery were similar ( $P > 0.05$ ), and the postoperative GLQI score was significantly higher than that of the preoperative group ( $P < 0.05$ ), and the GLQI score of laparoscopic group was significantly higher than that of open laparotomy group ( $P < 0.05$ ). **Conclusion:** Compared with open laparotomy surgery, laparoscopic cholecystectomy not only has the advantages of small operative trauma, short postoperative recovery time, but also low incidence of postoperative intestinal adhesion, and it is worthy of promotion.

**Key words:** Laparoscopic cholecystectomy; Open laparotomy cholecystectomy; Intestinal adhesion**Chinese Library Classification(CLC): R657.4 Document code: A****Article ID:** 1673-6273(2017)07-1347-03

## 前言

胆囊疾病最主要的治疗方法为手术切除病变胆囊,但是胆囊切除术后极易出现肠道功能损伤,部分患者甚至发生肠黏连,严重影响预后和生活质量。因此,在进行胆囊切除手术治疗的同时,积极防治术后肠黏连极为重要<sup>[1-3]</sup>。本实验通过对比两种常用胆囊手术的手术指标、消化道生存质量、肠黏连发生情况,旨在为临床优化制定胆囊手术方案提供借鉴,现报道如下:

## 1 资料与方法

### 1.1 研究对象

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回顾选取我院普外科在2015年2月-2016年6月间接受胆囊切除手术的196例病患,依据所用胆囊切除术式分为两组(开腹组和腹腔镜组),每组各98例患者,病例入选标准<sup>[4]</sup>:①经超声等检查确诊为胆囊结石,且胆囊结石最大直径超过3.0 cm;②符合胆囊切除手术适应症,无手术禁忌;③知情同意手术方案,自愿签订手术同意书;④既往无腹部手术史;排除标准<sup>[4]</sup>:①合并急性胆囊炎、胆囊穿孔等其他胆囊病变;②合并胆囊恶性肿瘤;③合并胰腺病变、心肾功能不全、肺功能障碍等疾病;④合并急腹症,病情危重;⑤腹腔镜中转开腹;⑥存在凝血功能异常、术前贫血等异常者;⑦拒绝加入者。

### 1.2 治疗方法

腹腔手术步骤:进入手术室后病患以仰卧位摆放与手术床上,并向左上轻微调整手术床角度,全身麻醉成功后,在脐下作

手术一观察孔,将腹腔镜缓慢置入腹腔,在上腹部作一 10 mm 的操作孔,充入二氧化碳气体,建立气腹,利用腹腔镜观察腹腔情况,分别在锁骨中线左右下腹部适宜位置作辅助操作孔,放置腹腔镜手术专用器械,利用电凝组成完成解剖结构的分离,暴露胆囊,游离并固定胆囊,碎石处理后,切除并取出胆囊,观察出血情况,冲洗术野,无活动出血后即刻撤除手术器械、解除气腹、缝合切口。对照组在连续硬膜外麻醉下仅常规开腹胆囊切除治疗,在右肋缘下 2 cm 作斜形手术切口,分离皮下组织等进腹腔,暴露并游离胆囊,切除并将取出胆囊,缝合胆总管和手术切口。

### 1.3 观察指标

在手术过程中准确统计手术耗时、术中出血指标,在术后 1 周内准确记录胃肠功能恢复时间和肠粘连情况,跟踪随访,统计两组的术后住院时间。肠黏连诊断标准<sup>[5]</sup>为:手术结束 96 h 内排便、排气等肠道功能未恢复正常,且腹部出现明显不适症状;躯干过伸位时疼痛(+);进食或进水均可引发反复性呕吐;腹腔局部隆起,听诊可闻及肠鸣音亢进;X 线检查提示肠段局部明显扩张,肠腔内可见积气或积液,内脏、腹壁等临近组织器官可见粘连带。

### 1.4 消化道生存质量评价

在治疗前、治疗后 1 个月、3 个月时分别进行消化道生存质量评价,评价依据为 GLQI (Gastrointestinal quality of life index, 消化病生存质量指数)消化道疾病生存质量量表<sup>[6]</sup>,评价内容包括自觉症状、日常生活、生理功能、心理功能以及社会功能共 5 个方面,其中 120 分以上为正常,分数越低,生存质量越差。所有调查均由两位专业人士共同进行。

### 1.5 统计学分析

全部实验结果均以电子数据形式保存,并利用 SPSS 软件(17.0 版)完成统计学比较,正态分布的计量资料用 t 检验,计数资料用卡方检验,重复测量数据用重复测量单因素分析,P<0.05,结果存在统计学差异。

## 2 结果

### 2.1 两组间一般资料对比

腹腔镜组患者年龄区间为 35-68 岁,病程 0.5-7.0 d,结石直径在 3.0-7.2 cm,开腹组年龄区间 34-67 岁,病程 0.5-6.5 d,结石直径在 3.5-7.4 cm,组间一般资料未见统计学差异(P>0.05)。见表 1。

表 1 两组间一般资料比较

Table 1 Comparison of the general data between the two groups

Indicators	Laparoscopy group	Laparotomy group	Statistic	P
Age (yrs)	46.74± 4.03	46.53± 3.89	0.632	>0.05
Gender (n)	Male	57(%)	0.038	>0.05
	Female	41(%)	0.701	>0.05
Stone diameter (cm)	4.59± 1.24	4.55± 1.22	0.521	>0.05
Disease course (d)	3.27± 1.09	3.31± 1.08	1.036	>0.05

### 2.2 两组手术相关指标比较

与开腹组相比,腹腔镜组的手术耗时更长,但是其术中出

血、术后胃肠功能恢复、住院时间更短,(P<0.05),组间比较差异显著。见表 2。

表 2 两组间手术相关指标比较

Table 2 Comparison of the surgical-related indicators between the two groups

Indicators	Laparoscopy group	Laparotomy group	t	P
Operation time (min)	123.57± 4.65	51.37± 4.62	52.068	<0.05
Intraoperative blood loss (ml)	27.52± 5.69	59.63± 4.52	81.651	<0.05
Gastrointestinal functional recovery time (h)	18.03± 3.51	51.37± 4.28	50.784	<0.05
Postoperative hospital stay (d)	4.51± 1.03	8.64± 1.58	73.056	<0.05

### 2.3 两组间消化道生存质量比较

术前两组病患的 GLQI 评分相仿(P>0.05),手术后多数病患的 GLQI 评分明显提高,手术前后组内 GLQI 评分相比差异

显著(P<0.05),手术后,组间 GLQI 评分存在统计差异(P<0.05)。见表 3。

表 3 两组间消化道生存质量比较

Table 3 Comparison of digestive tract quality of life between the two groups

Group	Before surgery	1 month after surgery	3 months after surgery	F	P
Laparoscopy group	101.67± 23.51	118.32± 15.36	124.69± 10.68	52.687	<0.05
Laparotomy group	101.71± 23.84	110.57± 18.67	118.63± 15.20	57.417	<0.05
t	0.978	52.789	55.085		
P	>0.05	<0.05	<0.05		

## 2.4 两组手术后肠黏连发生情况比较

在手术虽然两组均出现了确诊为肠黏连的病例,但是腹腔

镜组总发生率显著低于开腹组,组间比较差异显著( $P<0.05$ )。见表4。

表 4 两组间术后肠黏连发生情况比较

Table 4 Comparison of the occurrence of intestinal adhesion after surgery between the two groups

Group	n	Cases	Incidence rate
Laparoscopy group	98	10	10.20%
Laparotomy group	98	29	29.59%
$\chi^2$			63.025
P			0.000

## 3 讨论

胆囊切除手术过程中由于肠管暴露时间较长,在缺血、干燥、异物刺激等诸多不良因素的影响下,极容易因浆膜损伤而致导致肠黏连<sup>[7,8]</sup>,而肠黏连作为腹腔手术后最常见的并发症,如不及时解除黏连,能够诱发粘连性肠梗阻、造成肠道功能损伤,重症患者甚至出现生命威胁<sup>[9,10]</sup>。相关研究发现<sup>[11,12]</sup>在腹部手术后发生肠粘连的风险达60%以上,因此,积极预防术后肠黏连对于改善腹部手术效果极为重要。目前临床关于腹部手术后肠黏连发生情况的研究较多,但是由于缺乏大样本、长期研究,实验结果仍缺乏公信力,在现有研究中,多数结果显示<sup>[13-15]</sup>腹腔镜手术预防肠黏连的效果优于开腹手术。本研究从胆囊切除手术出发,通过观察分析发现,虽然腹腔镜胆囊切除手术的手术时间长,但是其术中出血、术后胃肠功能恢复时间、住院时间较开腹手术均明显缩短,而且虽然腹腔胆囊切除术后也不可避免的出现了肠黏连,但是其发生率显著高于开腹手术,且其消化道生存质量明显优于开腹手术,说明与开腹手术相比,腹腔镜手术不仅恢复快、损伤小,而且能够有效防止肠黏连、提高病患的消化道生存质量,考虑该结果与两种手术的特点和对人体损伤程度有关。开腹手术具有直观、手术野大、操作方便、费用低等优点,在手术过程中采取切开入腹的方式,在手术过程中相关肠段、腹腔器官直接裸露于空气之中,极易出现缺水干燥,并直接接受异物刺激,因此,对肠管损伤性较大<sup>[16,17]</sup>。而腹腔镜手术在手术中利用专业器械以美容切口入腹,不仅保障了腹腔完整结构,而且有效避免了肠管暴露于外,加之手术中极少应用纱布等,极大避免了异物对于腹腔的刺激,因此,其损伤性、对机体干扰下更小<sup>[18]</sup>。

总而言之,腹腔镜胆囊切除具有恢复快、对胃肠道干扰小等优点,能够在减少术后肠黏连的同时,提升病患消化道生存质量,建议有条件的治疗中心合理选用。

## 参 考 文 献(References)

- Bansal V K, Misra M C, Rajan K, et al. Single-stage laparoscopic common bile duct exploration and cholecystectomy versus two-stage endoscopic stone extraction followed by laparoscopic cholecystectomy for patients with concomitant gallbladder stones and common bile duct stones: a randomized controlled trial [J]. Surgical endoscopy, 2014, 28(3): 875-885
- Dokmak S, Raut V, Aussilhou B, et al. Laparoscopic left lateral resection is the gold standard for benign liver lesions: a case-control study [J]. HPB, 2014, 16(2): 183-187
- Kim H, Suh K S, Lee K W, et al. Long-term outcome of laparoscopic versus open liver resection for hepatocellular carcinoma: a case-controlled study with propensity score matching [J]. Surgical endoscopy, 2014, 28(3): 950-960
- Koc B, Karahan S, Adas G, et al. Comparison of laparoscopic common bile duct exploration and endoscopic retrograde cholangiopancreatography plus laparoscopic cholecystectomy for choledocholithiasis: a prospective randomized study[J]. Am J Surg, 2013, 206(4): 457-463
- Phillips M S, Marks J M, Roberts K, et al. Intermediate results of a prospective randomized controlled trial of traditional four-port laparoscopic cholecystectomy versus single-incision laparoscopic cholecystectomy[J]. Surgical endoscopy, 2012, 26(5): 1296-1303
- Koc B, Karahan S, Adas G, et al. Comparison of laparoscopic common bile duct exploration and endoscopic retrograde cholangiopancreatography plus laparoscopic cholecystectomy for choledocholithiasis: a prospective randomized study[J]. Am J Surg, 2013, 206(4): 457-463
- Wang B, Guo Z, Liu Z, et al. Preoperative versus intraoperative endoscopic sphincterotomy in patients with gallbladder and suspected common bile duct stones: system review and meta-analysis [J]. Surg Endosc, 2013, 27(7): 2454-2465
- Khashab M A, Valeshabad A K, Afghani E, et al. A comparative evaluation of EUS-guided biliary drainage and percutaneous drainage in patients with distal malignant biliary obstruction and failed ERCP[J]. Digestive diseases and sciences, 2015, 60(2): 557-565
- Artifon E L A, Marson F P, Gaidhane M, et al. Hepaticogastrostomy or choledochojejunostomy for distal malignant biliary obstruction after failed ERCP: Is there any difference? [J]. Gastrointestinal endoscopy, 2015, 81(4): 950-959
- Zhao X, Dong J, Jiang K, et al. Comparison of percutaneous transhepatic biliary drainage and endoscopic biliary drainage in the management of malignant biliary tract obstruction: A meta-analysis [J]. Digestive Endoscopy, 2015, 27(1): 137-145
- Navaneethan U, Njei B, Lourdusamy V, et al. Comparative effectiveness of biliary brush cytology and intraductal biopsy for detection of malignant biliary strictures: a systematic review and meta-analysis[J]. Gastrointestinal endoscopy, 2015, 81(1): 168-176
- Matsui Y, Ryota H, Sakaguchi T. Comparison of a Flexible-tip Laparoscope with a Rigid Straight Laparoscope for Single-incision Laparoscopic Cholecystectomy[J]. Am Surg, 2014, 80(12): 1245-1249
- Dong CC, Fang CH, Wu TC, et al. Management complicated hepatocholangitis with operative rigid choledochoscope guided by computed tomography (CT)-based 3D reconstruction technique [J]. Hepatogastroenterology, 2014, 61(134): 1556-1562

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