

doi: 10.13241/j.cnki.pmb.2022.10.024

腹腔镜胆囊切除术治疗胆囊结石合并急性胆囊炎的疗效 及对免疫功能和生活质量的影响*

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摘要 目的:观察腹腔镜胆囊切除术治疗胆囊结石合并急性胆囊炎的疗效及对免疫功能和生活质量的影响。**方法:**本次研究为回顾性研究,分析 2018 年 3 月~2021 年 3 月期间我院收治的 98 例胆囊结石合并急性胆囊炎患者的临床资料,根据手术方案的不同将患者分为 A 组(n=46,给予开腹手术)和 B 组(n=52,给予腹腔镜胆囊切除术),记录两组患者围术期相关指标、肝功能、免疫功能、生活质量和并发症发生率。**结果:**B 组术中出血量少于 A 组,切口大小短于 A 组,手术时间长于 A 组,住院时间、首次排气时间短于 A 组($P<0.05$)。两组术后 3 d 总胆红素(TBIL)、谷丙转氨酶(ALT)、谷草转氨酶(AST)均升高,但 B 组低于 A 组($P<0.05$)。B 组术后 3 d $CD3^+$ 、 $CD4^+$ 、NK 细胞、 $CD4^+/CD8^+$ 高于 A 组($P<0.05$),B 组术后 3 d $CD8^+$ 低于 A 组($P<0.05$)。B 组术后 3 个月健康生活量表简表(SF-36)各维度评分高于 A 组($P<0.05$)。B 组术后并发症发生率虽低于 A 组,但组间对比差异无统计学意义($P>0.05$)。**结论:**腹腔镜胆囊切除术治疗胆囊结石合并急性胆囊炎,虽然手术时间较开腹手术更长,但切口小、可促进患者术后恢复,对患者免疫功能、肝功能损害更轻,有利于提高患者生活质量。

关键词:腹腔镜胆囊切除术;胆囊结石;急性胆囊炎;疗效;免疫功能;生活质量

中图分类号:R657.4 **文献标识码:**A **文章编号:**1673-6273(2022)10-1914-05

Effect of Laparoscopic Cholecystectomy on Cholecystolithiasis Complicated with Acute Cholecystitis and its Effect on Immune Function and Quality of Life*

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ABSTRACT Objective: To observe the effect of laparoscopic cholecystectomy on cholecystolithiasis complicated with acute cholecystitis and its effect on immune function and quality of life. **Methods:** This study is a retrospective study. The clinical data of 98 patients with gallstone complicated with acute cholecystitis who were treated in our hospital from March 2018 to March 2021 were analyzed. According to the different operation schemes, the patients were divided into group A (n=46, treated by open operation) and group B (n=52, treated by laparoscopic cholecystectomy). The perioperative related indexes, liver function, immune function, quality of life and incidence of complications. **Results:** The amount of intraoperative bleeding in group B was less than that in group A, the size of incision was less than that in group A, the operation time was longer than that in group A, and the hospital stay and first exhaust time were shorter than those in group A ($P<0.05$). The levels of total bilirubin (TBIL), alanine aminotransferase (ALT) and aspartate aminotransferase (AST) at 3d after operation were increased, and the group B were higher than those in group A ($P<0.05$). $CD3^+$, $CD4^+$, NK cells and $CD4^+/CD8^+$ in group B were higher than those in group A ($P<0.05$), and $CD8^+$ in group B was lower than those in group A ($P<0.05$). The scores of short form of healthy life scale (SF-36) in group B at 3 months after operation were higher than those in group A ($P<0.05$). Although the incidence of postoperative complications in group B was lower than that in group A, there was no significant difference between groups ($P>0.05$). **Conclusion:** Laparoscopic cholecystectomy in the treatment of cholecystolithiasis complicated with acute cholecystitis, although the operation time is longer than that of laparotomy, but the incision is small, can promote the postoperative recovery of patients, has less damage to the immune function and liver function, and is conducive to improving the quality of life of patients.

Key words: Laparoscopic cholecystectomy; Gallstone; Acute cholecystitis; Curative effect; Immunity; Quality of life

Chinese Library Classification(CLC): R657.4 **Document code:** A

Article ID: 1673-6273(2022)10-1914-05

* 基金项目:江苏省临床医学科技专项(BL2014080)

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(收稿日期:2021-11-08 接受日期:2021-11-30)

前言

胆囊结石是外科的常见疾病,具有发病率高、排石不通和溶石困难等诸多特点,可出现多种并发症,如肝硬化、胆汁淤积、急性胆囊炎等^[1]。胆囊结石合并急性胆囊炎症状主要表现为右上腹阵发性疼痛,病情严重者其疼痛可向胸背部或肩部扩散^[2]。现有的研究认为胆囊结石合并急性胆囊炎发生的主要原因可归纳为胆囊结石引起胆囊管阻塞,胆汁淤滞而引发急性胆囊炎^[3]。开腹胆囊切除术是治疗胆囊结石合并急性胆囊炎的常用方案,可有效缓解疼痛并改善预后,但也存在术后创伤大、并发症多、不利于术后早期恢复等不足^[4,5]。腹腔镜下手术属于微创手术,具有手术创伤小、术后恢复快等优势^[6]。因胆囊结石合并急性胆囊炎患者胆囊局部粘连,早期被认为是腹腔镜手术的

禁忌患者^[7]。随着医疗技术、医疗器械的发展,腹腔镜手术的应用范围不断扩大,腹腔镜胆囊切除术逐渐应用于临床^[8]。本研究回顾性分析腹腔镜胆囊切除术和开腹手术对胆囊结石合并急性胆囊炎的影响,以期临床手术方案选择提供数据支持。

1 资料与方法

1.1 一般资料

本次研究为回顾性研究,分析 2018 年 3 月~2021 年 3 月期间我院收治的 98 例胆囊结石合并急性胆囊炎患者的临床资料,根据手术方案的不同将患者分为 A 组($n=46$)和 B 组($n=52$),两组一般资料对比无差异($P>0.05$),具有可比性。见表 1。

表 1 两组一般资料对比
Table 1 Comparison of two groups of general data

Groups	Male/fe-male	Age(years old)	Course of acute cholecystitis(h)	Body mass index(kg/m ²)	Stone condition		Combined with basic diseases		
					Single stone	Multiple stones	Hypertension	Diabetes	Hyperlipidemia
Group A ($n=46$)	25/21	43.82±4.86	25.29±3.47	28.93±2.17	38	8	8	5	6
Group B ($n=52$)	29/23	43.51±5.19	25.93±4.24	28.51±2.65	41	11	10	6	8
t/χ^2	0.020	0.304	-0.811	0.852	0.221			0.008	
P	0.888	0.762	0.419	0.397	0.638			0.929	

1.2 纳入、排除标准

纳入标准:(1)胆囊结石诊断标准:超声检查显示胆囊内存在不同数量的强回声光团或光斑;(2)急性胆囊炎的诊断标准^[9]:符合《临床疾病诊断与疗效判断标准》中关于急性胆囊炎的相关标准,出现发热、白细胞升高,影像学检查如计算机断层扫描(Computed tomography, CT)、磁共振成像(Magnetic resonance imaging, MRI)或超声等确诊;(3)年龄 18~65 岁;(4)符合手术指征者。排除标准:(1)合并恶性肿瘤者;(2)合并严重肝、脑、肾等器质性病变者;(3)合并胆管结石等其他部位结石者;(4)合并精神系统疾病者;(5)妊娠或哺乳期妇女。

1.3 方法

两组患者入院后完善相关检查,包括体征监测、体格检查、血/尿淀粉酶检查等,积极纠正器官功能障碍和治疗基础疾病,有效维持酸碱、水电解质平衡,常规胃肠减压,充分做好术前准备。两组术前禁食禁水 6 小时,取头高脚底仰卧位并向左倾斜约 20°,消毒铺巾,采用静吸全麻后行气管插管,B 组给予腹腔镜胆囊切除术,采用四孔法入腹,于脐上缘或脐下缘处作一长约 10 mm 切口,置入 Veress 气腹针,建立二氧化碳气腹,然后于脐部作约 10 mm 的小切口,置入 Trocar 及腹腔镜镜头,然后在剑突下部位作一切口,长约 10 mm,探查肝脏、胆囊和周围组织粘连情况。然后于右侧腋前线肋缘下约 20 mm 处和右锁骨中线肋缘下约 20 mm 处作一小切口,长约 5 mm, Trocar 及腹腔镜镜头。随后分离胆囊周围正常组织及粘连,采用 Hem-lock 夹闭后离断,剥离胆囊,冲洗腹腔后留置引流管,逐

层缝合切口。A 组给予传统开腹手术,沿右侧肋缘下作一长约 10 cm 切口,依次切开软组织至胆囊三角,离断胆囊管和相应动脉,切除胆囊,冲洗腹腔后留置引流管,逐层缝合切口。术后,两组均常规监测生命体征,观察手术切口变化,并常规给予抗感染、镇痛及营养支持治疗。

1.4 观察指标

1.4.1 围术期相关指标 观察并记录两组切口大小、手术时间、术中出血量、首次排气时间及住院时间。

1.4.2 肝功能、免疫功能 术前、术后 3d 采集两组患者外周静脉血 5 mL,经我院检验科处理后,采用美国库尔特公司(COULTER)生产的 EPICSXL 流式细胞仪检测免疫功能指标:CD3⁺、CD4⁺、CD8⁺、自然杀伤(Natural killer, NK)细胞,并计算 CD4⁺/CD8⁺。采用美国贝克曼库尔特公司生产的 LX20 全自动生化仪及配套试剂检测血清总胆红素(Total bilirubin, TBIL)、谷丙转氨酶(Alanine aminotransferase, ALT)、谷草转氨酶(Glutamic oxaloacetic transaminase, AST)水平。

1.4.3 生活质量各维度评分和总评分 术后以门诊复查的形式随访 3 个月,采用健康生活质量量表简表(Short form of healthy life scale, SF-36)^[10]记录两组术前、术后 3 个月生活质量。SF-36 包含 8 维度,分别为社会功能、精神健康、精力、生理机能、一般健康状况、躯体疼痛、生理/情感职能,每个维度 100 分,得分越高,健康状况越好。

1.4.4 并发症 观察所有患者术后并发症发生情况,主要包括切口感染、肺部感染及胃肠不适等。

1.5 统计学方法

采用 SPSS21.0 软件行数据分析,计数资料以率(%)表示,行 χ^2 检验。符合正态分布的计量资料使用($\bar{x} \pm s$)表示,组内、组间分别给予配对样本 t 检验或独立样本 t 检验, $P < 0.05$ 为差异有统计学意义。

2 结果

2.1 两组围术期相关指标对比

B 组术中出血量少于 A 组,切口大小短于 A 组,手术时间长于 A 组,住院时间、首次排气时间短于 A 组($P < 0.05$)。见表2。

表 2 两组围术期相关指标对比($\bar{x} \pm s$)

Table 2 Comparison of perioperative related indexes between the two groups($\bar{x} \pm s$)

Groups	Operation time(min)	Incision size(cm)	First exhaust time(h)	Intraoperative bleeding(mL)	Length of stay(d)
Group A(n=46)	93.16 $\pm$ 11.23	11.45 $\pm$ 1.31	51.09 $\pm$ 6.94	299.03 $\pm$ 24.16	12.47 $\pm$ 1.62
Group B(n=52)	108.96 $\pm$ 14.65	5.24 $\pm$ 1.17	43.98 $\pm$ 5.87	258.69 $\pm$ 23.67	8.28 $\pm$ 0.81
t	-5.932	24.790	5.494	8.339	16.475
P	0.000	0.000	0.000	0.000	0.000

2.2 肝功能指标手术前后变化

两组术前 TBIL、ALT、AST 对比无统计学差异($P > 0.05$)。两组术后 3 d TBIL、ALT、AST 均升高,但 B 组低于 A 组($P < 0.05$),详见表 3。

表 3 肝功能指标手术前后变化($\bar{x} \pm s$)

Table 3 Changes of liver function indexes before and after operation($\bar{x} \pm s$)

Groups	Point of time	TBIL(μ mol/L)	ALT(IU/L)	AST(IU/L)
Group A(n=46)	Before operation	13.68 $\pm$ 1.83	25.53 $\pm$ 3.80	25.89 $\pm$ 4.65
	3 d after operation	25.76 $\pm$ 2.49 [°]	41.39 $\pm$ 2.76 [°]	43.86 $\pm$ 4.12 [°]
Group B(n=52)	Before operation	13.43 $\pm$ 1.95	25.82 $\pm$ 3.27	25.58 $\pm$ 4.37
	3 d after operation	19.63 $\pm$ 1.76 [°]	33.98 $\pm$ 2.95 [°]	36.48 $\pm$ 3.46 [°]

Note: [°] compared with before operation, $P < 0.05$. [°] compared with 3 months after operation, $P < 0.05$.

2.3 免疫功能指标手术前后变化对比

两组术前 CD3⁺、CD4⁺、CD8⁺、NK 细胞、CD4⁺/CD8⁺ 对比无统计学差异($P > 0.05$)。两组术后 3 d CD3⁺、CD4⁺、NK 细胞、CD4⁺/CD8⁺ 均下降,但 B 组高于 A 组($P < 0.05$),CD8⁺ 升高,但 B 组低于 A 组($P < 0.05$),详见表 4。

表 4 免疫功能指标手术前后变化对比($\bar{x} \pm s$)

Table 4 Comparison of changes of immune function indexes before and after operation($\bar{x} \pm s$)

Groups	Point of time	CD3 ⁺ (%)	CD4 ⁺ (%)	CD8 ⁺ (%)	NK cells(%)	CD4 ⁺ /CD8 ⁺
Group A(n=46)	Before operation	45.46 $\pm$ 5.11	38.41 $\pm$ 3.18	22.38 $\pm$ 2.06	19.24 $\pm$ 2.16	1.72 $\pm$ 0.14
	3d after operation	34.59 $\pm$ 5.46 [°]	29.55 $\pm$ 3.22 [°]	28.96 $\pm$ 2.79 [°]	11.38 $\pm$ 1.92 [°]	1.02 $\pm$ 0.12 [°]
Group B(n=52)	Before operation	45.71 $\pm$ 4.24	38.18 $\pm$ 3.14	22.49 $\pm$ 2.36	19.41 $\pm$ 2.39	1.70 $\pm$ 0.15
	3d after operation	40.35 $\pm$ 5.38 [°]	34.91 $\pm$ 3.05 [°]	25.11 $\pm$ 3.68 [°]	15.97 $\pm$ 2.01 [°]	1.39 $\pm$ 0.16 [°]

Note: [°] compared with before operation, $P < 0.05$. [°] compared with 3 months after operation, $P < 0.05$.

2.4 两组生活质量量表各维度评分对比

两组术前 SF-36 各维度评分对比无统计学差异($P > 0.05$)。两组术后 3 个月 SF-36 各维度评分升高,且 B 组高于 A 组($P < 0.05$),详见表 5。

2.5 两组并发症发生率对比

B 组术后并发症发生率(7.69%)虽低于 A 组(17.39%),但组间对比差异无统计学意义($P > 0.05$),详见表 6。

3 讨论

急性胆囊炎属于胆囊结石常见并发症,以往报道证实^[11],

约有 95% 的急性胆囊炎患者合并有胆囊结石。胆囊结石合并急性胆囊炎为临床常见的急危重症,如果未得到及时的治疗与控制,将可导致胆囊穿孔、坏疽、积水、萎缩等严重后果^[12,13]。手术治疗可有效改善胆囊结石合并急性胆囊炎患者的预后,因患者此时病灶处于炎性充血水肿阶段,与周围组织粘连较少,且解剖结构和层次分明,此时分离和切除胆囊,有利于迅速缓解患者疼痛,控制病情进展^[14,15]。开腹胆囊切除术的彻底性、有效性已无可争议,手术成功率也较高,但也一直存在切口大、术中出血量多、术后恢复时间长、并发症发生率高、不利因素^[16,17]。腹腔镜手术与其精准、微创化、术后恢复快等优势迅速在外科领

表 5 两组生活质量量表各维度评分对比($\bar{x}\pm s$,分)Table 5 Comparison of scores of each dimension of quality of life scale between the two groups($\bar{x}\pm s$, score)

Groups	Point of time	Physiological function	Energy	Social function	Physical pain	General health status	Mental health	Physiological function	Emotional function
Group A (n=46)	Before operation	61.59±5.07	59.81±6.19	63.02±6.38	62.34±5.12	65.49±6.36	63.87±7.43	64.69±6.27	63.32±6.51
	3 months after operation	70.63±6.11 [°]	68.25±6.24 [°]	71.06±5.35 [°]	72.07±6.38 [°]	77.54±6.41 [°]	79.45±6.56 [°]	73.75±6.47 [°]	72.41±5.34 [°]
Group B (n=52)	Before operation	61.83±6.27	59.34±5.21	62.33±6.27	61.71±5.04	64.87±6.52	63.29±6.62	64.25±5.23	63.78±6.17
	3 months after operation	82.44±5.23 [°]	81.03±6.18 [°]	82.72±7.05 [°]	84.23±6.36 [°]	85.43±5.29 [°]	89.87±6.03 [°]	86.82±7.15 [°]	89.34±6.11 [°]

Note: [°] compared with before operation, $P<0.05$. [°] compared with 3 months after operation, $P<0.05$.

表 6 两组并发症发生率对比[例(%)]

Table 6 Comparison of complication rates between the two groups[n(%)]

Groups	Pulmonary infection	Incision infection	Gastrointestinal discomfort	Total incidence
Group A(n=46)	3(6.52)	2(4.35)	3(6.52)	8(17.39)
Group B(n=52)	1(1.92)	1(1.92)	2(3.85)	4(7.69)
χ^2				2.137
P				0.144

域中占有一席之地^[18]。有不少研究已表明^[19,20],行腹腔镜手术的患者的满意度明显高于开腹手术患者,但以往也有一段时间,临床认为胆囊疾病处于腹腔镜手术的禁忌之中,随着医疗器械的发展,禁忌的手术逐渐变为相对禁忌或无禁忌手术^[21],故本研究就此展开分析。

本次研究结果中,两组患者均顺利完成手术,且腹腔镜胆囊切除术具有切口小、术中出血量少、首次排气时间、住院时间短等优势,但腹腔镜胆囊切除术的手术时间长于开腹手术,可能是因为开腹手术视野清楚,解剖位置关系和结构清晰,施术者较易确定胆囊管和胆囊动脉,而腹腔镜手术视野较为狭窄,给胆囊管和胆囊动脉的夹闭带来一定困难,故而手术时间更长^[22-24]。外科手术可造成机体组织和免疫功能损伤,并引起应激反应^[25]。本次研究结果显示,两种手术方式下均会引起肝功能和免疫功能损伤,但腹腔镜胆囊切除术治疗的损伤程度更轻,这可能是由于腹腔镜胆囊切除术属于微创治疗,致使机体应激反应程度较开腹手术明显减轻,可有效保护人体肝功能^[26]。同时应激反应为机体受到损伤后发生的自我保护,应激反应程度轻的患者可弱化其自我保护意识,患者术后恢复速度更快,利于其免疫功能的逐步恢复^[27-29]。此外,本研究还观察到腹腔镜胆囊切除术治疗的患者其生活质量也得到明显提升,由此可见,腹腔镜胆囊切除术不失为创伤小、恢复迅速且改善患者生活质量的最优选择方案。另本研究中腹腔镜胆囊切除术的患者并发症发生率虽低于开腹手术患者,但组间对比未见统计学差异。但刘雨睿等人^[30]研究认为的腹腔镜胆囊切除术可明显降低并发症发生率,与本研究有所不同,考虑可能与纳入样本量偏少、且存在个体差异性有关所致,均有待后续的深入分析论证。需要注意的是,腹腔镜胆囊切除术对术者的要求较高,需要施术者详细了解人体胆囊解剖结构及位置关系等,同时应避免损伤

正常组织和器官。

综上所述,腹腔镜胆囊切除术治疗胆囊结石合并急性胆囊炎,手术时间更长,但切口小、术中出血量少、术后恢复快,且对患者免疫功能、肝功能损害更轻,有利于提高患者生活质量。

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