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· 专题研究 ·

肝圆韧带间置肠肝吻合术在肝门区肿瘤外科治疗中的应用价值

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摘要

目的: 探讨肝门区肿瘤外科治疗中采用肝圆韧带间置肠肝吻合术的临床应用效果。

方法: 选取山东第一医科大学第二附属医院肝胆外科收治的 97 例肝门区肿瘤患者, 采用随机数字表法分为研究组 (49 例) 和对照组 (48 例), 两组患者均行肝门区肿瘤切除术, 术中研究组采用肝圆韧带间置肠肝吻合术, 对照组采用常规吻合术。比较两组相关手术指标、肝功能指标及生存率差异。

结果: 两组术前一般资料差异无统计学意义 (均 $P>0.05$)。两组手术时间、术中出血量、住院时间比较差异无统计学意义 (均 $P>0.05$) ; 两组术后 48 h 主要肝功能指标、血红蛋白及白细胞水平均较术前明显升高 (均 $P<0.05$) , 但两组间差异均无统计学意义 (均 $P>0.05$) ; 研究组患者的并发症发生率明显低于对照组 (26.53% vs. 54.17%, $P<0.05$) ; 两组术后 1、2、3 年的生存率差异均无统计学意义 (均 $P>0.05$) 。

结论: 肝门区肿瘤手术治疗中采用肝圆韧带间置肠肝吻合术能够获得与常规吻合术相当的近远期疗效, 并可显著减少手术并发症的发生, 推荐临床使用。

关键词

肝肿瘤; 肝切除术; 胆管肠吻合术, 肝

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Application value of using enterohepatic anastomosis with interposition of round ligament in surgical treatment of tumors in hepatic hilar region

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Abstract

Objective: To investigate the clinical effect of using interposition of the hepatic round ligament in surgical treatment of tumor in the hepatic hilar region.

Methods: Ninety-seven patients with tumor in the hepatic hilar region admitted in Department of Hepatobiliary Surgery of the Second Affiliated Hospital of Shandong First Medical University were enrolled, and were randomly assigned into the study group (49 cases) and the control group (48 cases) by using random number table. Both groups of patients underwent hilar tumor resection, and patients in study group underwent enterohepatic anastomosis with interposition of the hepatic round ligament, while those in control group underwent

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conventional anastomosis during operation. The main surgical variables, liver function parameters and survival rates were compared between the two groups of patients.

Results: The preoperative data showed no significant differences between the two groups (all $P>0.05$). No statistical differences were noted in operative time, intraoperative blood loss, and length of hospitalization between groups (all $P>0.05$). The main parameters of liver function, the hemoglobin levels and the white blood cell counts were all significantly increased in both groups on 48 h after operation compared with their preoperative values (all $P<0.05$), but all showed no significant differences between the two groups (all $P>0.05$). The overall incidence of postoperative complications was significantly lower in study group than that in control group (26.53% vs. 54.17%, $P<0.05$). There were no significant differences in 1-, 2- and 3-year survival rates between the two groups (all $P>0.05$).

Conclusion: In surgical treatment of tumor in the hepatic hilar region, enterohepatic anastomosis with interposition of the hepatic round ligament can achieve the similar short- and long-term efficacy as the conventional enterohepatic anastomosis, with reduced complications. So, it is recommended to be used in clinical practice.

Key words Liver Neoplasms; Hepatectomy; Portoenterostomy, Hepatic

CLC number: R735.7

肝门区肿瘤是一种临床常见的恶性肿瘤，常发生于第一、二、三肝门附近，贴近肝后下腔静脉、肝静脉根部与门静脉左右肝部位^[1-2]。患者常伴有肝区疼痛，疼痛以持续性钝痛、胀痛以及刺痛为主，疼痛原因与肿瘤快速生长所致肝包膜张力增大有关^[3-4]。手术是治疗肝门区肿瘤的常见措施，常规吻合术虽然切除了病变组织，稳定病情，缓解临床病症，但术后并发症较多，患者疼痛较严重，不利于术后恢复。肝圆韧带间置肠肝吻合术先行肝圆韧带与门静脉前壁缝合，然后再行肠肝吻合^[5-6]。相关文献^[7]指出，肝圆韧带间置肠肝吻合术在降低术后并发症与改善肝功能指标方面具有显著疗效。本研究对山东第一医科大学第二附属医院肝胆外科收治的97例肝门区肿瘤患者分别使用常规吻合术与肝圆韧带间置肠肝吻合术治疗，并对比分析其临床治疗效果及肝功能指标。

1 资料与方法

1.1 一般资料

选取山东第一医科大学第二附属医院肝胆外科2015年3月—2016年3月收治的97例肝门区肿瘤患者，采用随机数字表法分为研究组（49例）和对照组（48例）。(1)研究组49例，其中男29例，女20例；年龄35~74岁，平均年龄（53.0±10.3）岁；术前肝功能Child-Pugh分级均为A级；Bismuth分

型标准：II型15例，IIIa型13例，IIIb型9例，IV型12例；谷丙转氨酶（ALT）（55.1±37.8）U/L，谷草转氨酶（AST）（47.3±38.6）U/L，总胆红素（TBIL）（37.2±9.1）mmol/L。(2)对照组48例，其中男30例，女18例；年龄41~73岁，平均年龄（55.9±11.4）岁；术前肝功能Child-Pugh分级均为A级；Bismuth分型标准：II型16例，IIIa型11例，IIIb型7例，IV型14例；ALT（53.0±32.4）U/L，AST（44.9±34.8）U/L，TBIL（36.5±12.0）mmol/L。两组患者的年龄、性别等上述基础资料间差异无统计学意义（均 $P>0.05$ ），具有可比性。本研究已通过医院伦理委员会批准，所有患者均知情同意并签署知情同意书。

1.2 纳入排除标准

纳入标准^[7]：(1)肝门区肿瘤的诊断主要依据增强CT、病理活检证实；(2)术前行心肺功能检查，无手术禁忌证；(3)明确肿瘤未发生远处转移；(4)术前与患者签订知情同意书。排除标准^[8]：(1)合并严重肝功能障碍的患者；(2)严重的心肺功能不全、不宜进行手术治疗的患者；(3)术后不能接受随访观察的患者。

1.3 手术方法

两组患者均实施常规肝门区肿瘤切除术，且创面肝管开口约3个，对照组患者采用常规吻合术，采用0号丝线缝合胆管开口后壁与空肠祥

切口后壁,再使用4号丝线以U型方法缝合空肠袢切口前壁与胆管开口处肝脏断面。置入导管于肠袢腔,减轻肠道压力,促进吻合口愈合。研究组患者在对照组基础上采用肝圆韧带间置肠肝吻合术:将肝门胆管向上掀起,使其位于门静脉分叉部的上方;在门静脉分叉部的上方切断肝管,使所有肝管开口均位于门静脉分叉部上方的“肝坑”内;利用肝圆韧带重建“肝坑”后缘,将肝

圆韧带缝合至门静脉矢状部及其Glisson鞘膜上,最右一针缝合至门静脉右支入肝处的Glisson鞘膜及肝组织上,完成肝圆韧带间置肠肝吻合术。术中图像见图1。术后两组患者均接受抗感染与护肝治疗,术后5 d拔除胃肠减压管后食用流质饮食。若患者未发生胆汁漏则可将引流管拔除,若出现胆汁漏应根据病情延迟拔管。

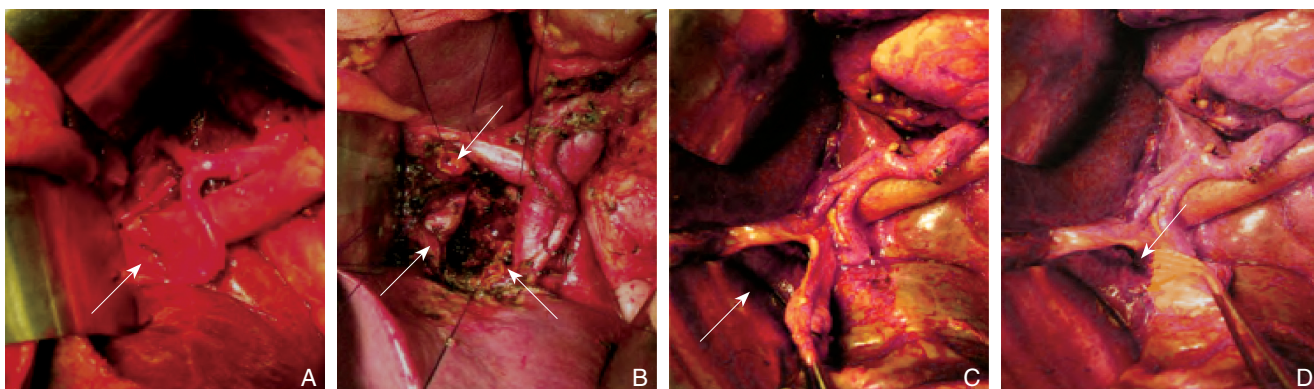


图1 肝圆韧带间置肠肝吻合术中图像 A: 向上掀起肝门胆管(箭头所指),使其位于门静脉分叉部的上方;B: 于门静脉分叉部的上方切断肝管,使肝管开口(箭头所指)位于门静脉分叉部上方的“肝坑”中;C: 用肝圆韧带(箭头所指)重建“肝坑”后缘;D: 将肝圆韧带缝合至门静脉矢状部

Figure 1 Intraoperative views of enterohepatic anastomosis with interposition of the hepatic round ligament A: Lifting upwards the hilar bile duct (shown by arrow) to the upper side of the furcation of the portal vein; B: Cutting the hepatic duct at the upper side of the furcation of the portal vein, and making the opening of the hepatic duct (shown by arrow) in the “liver pit” above the furcation of the portal vein; C: Reconstruction of the posterior edge of the “liver pit” with the hepatic round ligament (shown by arrow); D: Suturing the hepatic round ligament to the sagittal part of the portal vein

1.4 术后随访

采用电话、门诊及家访等方式对患者进行随访,自手术日开始计算,所有患者均随访3年或至患者死亡。

1.5 观察指标及检测方法

1.5.1 观察指标 对比两组患者的手术时间、手术出血量、住院时间及术后胆汁漏(腹腔引流或切口渗液证实为胆汁,T管胆道造影检查证实)、术后出血、黄疸、发热、腹痛的发生率。比较两组术后实验室指标:ALT、AST、TBIL、直接胆红素(DBIL)、白蛋白(ALB)、血红蛋白(HB)、白细胞(WBC)。比较两组患者术后1、2、3年生存率。

1.5.2 指标检测方法 抽取两组患者术前与术后48 h空腹肘静脉血3 mL,3 000 rpm离心10 min,提取血清分离后置于-20℃低温保存。采用GF-2245全自动生化分析仪(广州永程实验仪器有限公司)测定肝功能指标(ALT、AST、TBIL、

DBIL、ALB、HB、WBC)水平。检测试剂盒购于自上海蓝怡医药有限公司。

1.6 统计学处理

数据分析及统计在专业软件SAS 9.0软件包中处理,计量指标采用均数±标准差($\bar{x} \pm s$)表示,组间比较采用t检验,组内比较采用配对t检验;计数资料采用百分率或构成比(%)[n (%)]表示,比较采用 χ^2 检验;采用Kaplan-Meier方法评估患者术后生存率,组间生存率的比较采用Log-rank检验, $P < 0.05$ 为差异有统计学意义。

2 结果

2.1 两组患者的围手术期指标比较

研究组和对照组的手术时间、术中出血量、住院时间比较差异无统计学意义(均 $P > 0.05$);(表1)。

表 1 两组患者的围手术期指标比较 ($\bar{x} \pm s$)Table 1 Comparison of perioperative variables between the two groups of patients ($\bar{x} \pm s$)

组别	手术时间 (min)	术中出血量 (mL)	住院时间 (d)
研究组 (n=49)	173.4 ± 31.9	309.5 ± 57.2	15.8 ± 3.4
对照组 (n=48)	168.9 ± 34.6	327.2 ± 61.3	16.2 ± 3.7
t	0.666	1.471	0.555
P	0.519	0.092	0.647

2.2 两组患者手术前后的肝功能指标比较

术后 48 h 两组患者的 ALT、AST、TBIL、DBIL、ALB、HB、WBC 均较术前明显升高 (均 $P < 0.05$)；研究组和对照组组间术前、术后 48 h 的 ALT、AST、TBIL、DBIL、ALB、HB、WBC 差异无统计学意义 (均 $P > 0.05$) (表 2)。

2.3 两组患者的手术并发症发生率比较

研究组患者的总并发症发生率 (26.6%) 明显低于对照组 (54.2%)，差异有统计学意义 ($P < 0.05$) (表 3)。

表 2 两组患者术前及术后肝功能指标比较 ($\bar{x} \pm s$)Table 2 Comparison of pre- and postoperative liver function parameters between the two groups of patients ($\bar{x} \pm s$)

项目	研究组 (n=49)		对照组 (n=48)	
	术前	术后 48 h	术前	术后 48 h
ALT (U/L)	55.1 ± 37.8	310.9 ± 169.2 ¹⁾	53.0 ± 32.4	332.7 ± 174.5 ¹⁾
AST (U/L)	47.3 ± 38.6	287.3 ± 155.0 ¹⁾	44.9 ± 34.8	295.6 ± 161.4 ¹⁾
TBIL (mmol/L)	37.2 ± 9.1	96.3 ± 19.2 ¹⁾	36.5 ± 12.0	101.8 ± 21.5 ¹⁾
DBIL (mmol/L)	12.7 ± 8.6	28.0 ± 11.4 ¹⁾	11.5 ± 7.2	31.4 ± 13.6 ¹⁾
ALB (g/L)	38.4 ± 3.2	32.1 ± 2.9 ¹⁾	37.9 ± 3.1	33.1 ± 3.1 ¹⁾
HB (g/L)	121.9 ± 9.7	118.4 ± 12.6 ¹⁾	120.6 ± 10.3	117.6 ± 11.4 ¹⁾
WBC ($\times 10^9/L$)	7.9 ± 2.5	11.3 ± 4.1 ¹⁾	8.3 ± 2.9	12.4 ± 4.5 ¹⁾

注：1) 与本组术前比较， $P < 0.05$

Note: 1) $P < 0.05$ vs. preoperative value of the same group

表 3 两组患者的手术并发症率比较 [n (%)]

Table 3 Comparison of the incidence of postoperative complication between the two groups of patients [n (%)]

组别	胆汁漏	出血	黄疸	发热	腹痛	总并发症
研究组 (n=49)	2 (4.1)	1 (2.0)	2 (4.1)	4 (8.2)	4 (8.2)	13 (26.6)
对照组 (n=48)	5 (10.4)	1 (2.1)	5 (10.4)	9 (18.8)	6 (12.5)	26 (54.2)
χ^2	—	—	—	—	—	7.703
P	—	—	—	—	—	0.006

2.4 两组患者生存率比较

所有患者均完成随访，患者死亡原因主要为反复肝内胆管炎、肝功能衰竭及肿瘤复发转移。生存分析结果显示，研究组和对照组患者术后 1、2、3 年的生存率差异无统计学意义 (均 $P > 0.05$) (表 4)。

表 4 两组患者生存率比较 (%)

Table 4 Comparison of survival rates between the two groups of patients (%)

组别	1 年	2 年	3 年
研究组 (n=49)	97.96	93.88	79.59
对照组 (n=48)	93.75	87.50	72.92
χ^2	1.087	1.172	0.597
P	0.297	0.297	0.44

3 讨论

肝门区肿瘤是临床较为少见的肝总管及其位置上的肝外胆管类恶性肿瘤，但其在肝外胆管癌的发生率较高，约 60%^[9-10]。肝门区肿瘤的发病机制尚未明确，可能与长期肝炎病史、家族遗传、寄生虫感染以及长期食用含有黄曲霉毒素的食物有关，发病时常伴有压迫或血管与胆管受侵犯，导致胆道阻塞，出现肿瘤急症，对患者生活质量造成严重影响^[11-12]。由于该区域的解剖结构复杂，手术切除难度较大，极易侵犯神经、血管，导致淋巴结转移，出血量多，且风险较大，术后极易出现并发症^[13-14]。如何控制术中出血量、降低术后并发症并提高肝门区肿瘤的切除率是临床肝脏外科的重点^[15-16]。常规吻合术是临床常见术式，虽

然能够切除肝门区病变肿瘤,缓解临床病症,但术后极易出现胆汁漏、出血、黄疸、发热、腹痛等并发症,且术后对肝功能影响较重,极易出现肝衰竭,不利于患者术后机体康复^[17-19]。

肝圆韧带间置肠肝吻合术是一种新型术式,具有手术创伤小、术后恢复快、对患者机体免疫系统影响小等特征,可降低术中出血风险,有效控制肿瘤细胞的进展,最大程度地保留肝脏原有的结构,改善患者的生存率^[20-21]。本研究中,研究组与对照组的手术时间、术中出血量、住院时间比较差异无统计学意义(均 $P>0.05$),研究组和对照组患者术后1、2、3年的生存率差异无统计学意义(均 $P>0.05$),显示肝圆韧带间置肠肝吻合术的安全性较高,不会增加手术风险,且对生存率无明显影响^[22-23]。其原因可能为常规切除肝门区肿瘤后,肝断面会出现多个胆管开口,将其整形合并为一个开口的手术操作难度较大^[24]。常规吻合术采用肠肝大口吻合,即吻合门静脉分叉处的后壁与空肠,肝断面前吻合前壁与空肠,包含胆管开口^[25-26]。但由于该术式常因肠液腐蚀血管壁而破裂,出现致命性大出血^[27-28]。肝圆韧带间置肠肝吻合术改良了多口吻合术,先缝合肝圆韧带与门静脉前壁,再行肠肝吻合,有利于减少出血量并降低肠瘘等并发症的发生率^[29-30]。本研究发现,研究组与对照组术后48 h ALT、AST、TBIL、DBIL、ALB、HB、WBC水平均较术前显著提高($P<0.05$),表明肝圆韧带间置肠肝吻合术对肝脏的解剖结构损伤小,术后肝功能恢复好,有利于机体康复。相关文献^[31]指出,对于合并黄疸的肝门区肿瘤患者,术中若切除过多肝组织,会诱发术后肝功能衰竭,对患者的生命安全造成严重威胁。因此手术实际操作中应多保留肝组织,且无需刻意游离胆管,在保障阴性切缘处的同时行肝叶部分切除术,无需扩大切除左、右半肝^[32]。本研究还发现,研究组患者术后胆汁漏、出血、黄疸、发热、腹痛等并发症发生率低于对照组,且差异具有统计学意义($P<0.05$),这进一步表明肝门区肿瘤患者应用肝圆韧带间置肠肝吻合术治疗的临床疗效显著优于常规吻合术,能够准确切除肿瘤,降低切缘癌的遗留风险,最大程度地保留肝脏原有结构,有利于术后肝功能恢复^[33-34]。

综上所述,肝圆韧带间置肠肝吻合术治疗肝门区肿瘤患者具有显著的临床疗效,能够获得与常规吻合术相等的手术效果,且生存率相当,同时可显

著减少手术并发症的发生,值得临床借鉴应用。

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