

doi: 10.13241/j.cnki.pmb.2019.05.012

· 临床研究 ·

经皮肝穿刺胆道引流术与逆行胰腺胆管造影术对结石性
梗阻性黄疸患者的疗效比较研究*李 雪^{1,2} 孙玉明^{2△} 龙云辉³ 徐 军³ 桂 敏⁴

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摘要 目的:比较经皮肝穿刺胆道引流术(PTCD)与逆行胰腺胆管造影术(ERCP)对结石性梗阻性黄疸患者的治疗效果。**方法:**选取海军军医大学第三附属医院东方肝胆外科医院于2016年3月~2018年4月间收治的结石性梗阻性黄疸患者80例。按照介入治疗术式的异同将患者分为ERCP组(n=40,给予ERCP治疗)和PTCD组(n=40,给予PTCD治疗),记录两组手术时间、术中出血量、住院费用、住院时间、治疗成功率、黄疸缓解率、并发症发生情况,比较两组术前、术后1d、术后7d肝功能指标情况。**结果:**两组患者手术时间、术中出血量、治疗成功率、黄疸缓解率比较差异无统计学意义($P>0.05$),ERCP患者住院费用少于PTCD组患者,住院时间亦短于PTCD组患者($P<0.05$)。两组患者术后1d、术后7d丙氨酸转氨酶(ALT)、总胆红素(TBIL)、直接胆红素(DBIL)水平均较术前降低,且两组患者术后7d上述指标水平低于术后1d($P<0.05$),ERCP组术后1d、术后7d ALT、TBIL、DBIL水平与PTCD组比较差异无统计学意义($P>0.05$)。两组患者术后并发症总发生率比较差异无统计学意义($P>0.05$)。**结论:**PTCD、ERCP治疗结石性梗阻性黄疸,均能有效改善患者临床症状和肝功能,且手术安全性相当,但ERCP可明显减少住院时间和住院费用。

关键词:经皮肝穿刺胆道引流术;逆行胰腺胆管造影术;结石性梗阻性黄疸;疗效

中图分类号:R657.4 **文献标识码:**A **文章编号:**1673-6273(2019)05-851-04

A Comparative Study of Percutaneous Transhepatic Biliary Drainage and
Retrograde Cholangiopancreatography in the Treatment of Calculous
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ABSTRACT Objective: To compare the efficacy of percutaneous transhepatic cholangiography (PTCD) and retrograde cholangiopancreatography (ERCP) in the treatment of calculous obstructive jaundice. **Methods:** 80 patients with calculous obstructive jaundice who were admitted to the Oriental Hepatobiliary Surgery Hospital of the Third Affiliated Hospital of Naval Military Medical University from March 2016 to April 2018 were selected. The patients were divided into ERCP group (n=40, given ERCP) and PTCD group (n=40, given PTCD) according to different interventional procedures. The operation time, intraoperative bleeding volume, hospitalization expenses, hospitalization time, treatment success rate, jaundice remission rate and complications were recorded between the two groups, the liver function indexes of the two groups were compared before operation, 1 d after operation and 7 d after operation. **Results:** There were no significant differences between the two groups in operation time, intraoperative bleeding volume, treatment success rate and jaundice remission rate ($P>0.05$). The hospitalization expenses of ERCP patients were less than those of PTCD patients, and the hospitalization time was shorter than that of PTCD patients ($P<0.05$). The alanine aminotransferase (ALT), total bilirubin (tTBIL) and direct bilirubin (DBIL) were lower in the two groups at 1 d after operation, 7 d after operation than those before operation, and the above-mentioned indexes in the two groups at 7 d after operation were lower at 1d after operation($P<0.05$). There was no significant difference in ALT, TBIL and DBIL levels between ERCP group and PTCD group at 1d and 7 d after operation($P>0.05$). There was no significant difference in the

* 基金项目:上海市卫生和计划生育委员会科研项目(2016Y0287)

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(收稿日期:2018-11-04 接受日期:2018-11-28)

incidence of postoperative complications between the two groups($P>0.05$). **Conclusion:** PTCD and ERCP can effectively improve the clinical symptoms and liver function of patients with calculous obstructive jaundice, and the safety of operation is quite similar. However, ERCP can significantly reduce hospitalization time and hospitalization costs.

Key words: Percutaneous transhepatic biliary drainage; Retrograde cholangiopancreatography; Calculous obstructive jaundice; Efficacy

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

Article ID: 1673-6273(2019)05-851-04

前言

梗阻性黄疸是指由于各种原因引起的胆道系统受到阻塞,胆汁排泄障碍,进而使胆红素回流至血液引起黄疸的一类疾病^[1,2]。临床症状主要表现为皮肤发黄、血中胆红素浓度升高、小便黄染等,严重者进展至肝炎、肝硬化,严重威胁着患者的生命健康^[3,4]。胆道结石是梗阻性黄疸的常见致病原因,由于结石性梗阻性黄疸患者早期症状不明显,经确诊时已处于中晚期,无法进行手术切除,只能通过介入治疗以解除或减轻梗阻现象,延长患者生命^[5,6]。经皮肝穿刺胆道引流术(Percutaneous transhepatic cholangial drainage, PTCD)^[7]、逆行胰胆管造影术(Endoscopic retrograde cholangiopancreatography, ERCP)^[8]是常用的治疗结石性梗阻性黄疸的手段,其中 PTCD 是指在 X 线或 B 超引导下,将造影剂直接注入胆道,通过造影管行胆道引流,该术式属于单纯引流,可行对症治疗^[9],ERCP 则是指根据患者据病变性质和病情,插入相关辅助器械进行治疗,以解除患者梗阻状态,可行对症治疗^[10]。本研究就我院收治的结石性梗阻性黄疸患者经 PTCD 或 ERCP 治疗的临床效果进行分析,以评价上述两种治疗方式各自的优势。

1 资料与方法

1.1 一般资料

选取海军军医大学第三附属医院东方肝胆外科医院于 2016 年 3 月~2018 年 4 月间收治的 80 例结石性梗阻性黄疸患者。纳入标准:(1)所有患者均经肝胆胰脾彩超或者磁共振胰胆管成像确诊为结石性梗阻性黄疸;(2)临床资料完整者;(3)入院前未接受过其他治疗者;(4)患者及其家属知情本次研究并签署知情同意书;(5)均具备手术指征者。排除标准:(1)合并心、肺、肾等脏器功能不全者;(2)伴有精神障碍不能配合本次研究者;(3)因其他原因所致的梗阻性黄疸者;(4)妊娠或者哺乳期妇女;(5)合并恶性肿瘤者。研究经我院伦理学委员会批准。根据介入治疗术式的不同将患者分为 ERCP 组($n=40$)和 PTCD 组($n=40$),其中 ERCP 组男 21 例,女 19 例,年龄 45~76 岁,平均(58.28 ± 3.91)岁;合并糖尿病 10 例,合并高血压 8 例。PTCD 组男 23 例,女 17 例,年龄 43~74 岁,平均(57.49 ± 4.16)岁;合并糖尿病 11 例,合并高血压 7 例。两组患者基线资料比较无统计学差异($P>0.05$),均可衡可比。

1.2 治疗方法

所有患者术前均给予禁食、补液、抑酸、抗生素、护肝等保守对症治疗,在此基础上,PTCD 组给予 PTCD 手术治疗,具体操作如下:患者取腋中线入路,于肋骨上缘处进针,以胆管扩张最明显处为最佳位置,若患者因左肝管阻塞不能采用腋中线入

路,则采用剑突下入路。取用一步胆道穿刺法,成功后注入造影剂,随后送入导丝,采用超声监测导丝位置,当导丝超出穿刺针 3 cm 以上时,即可拔出穿刺针,将 2.95 mm 的扩张管沿导丝送入扩张胆管内,外固定导丝,撤出扩张管,将引流导管沿导丝送入胆管内,近端置于扩张胆管内,远端置于十二指肠,导丝撤出,固定引流管后,接上引流袋。ERCP 组给予 ERCP 手术治疗,具体操作如下:术前肌注盐酸哌替啶(青海制药厂有限公司,国药准字 H63020022,规格:1 mL:50 mg)/50 mg、地西洋(上海旭东海普药业有限公司,国药准字 H31021864,规格:2 mL:10 mg)/10 mg、盐酸消旋山莨菪碱注射液(河北美图制药有限责任公司,国药准字 H13021256,规格:1 mL:10 mg)/10 mg,将十二指肠镜插入十二指肠降段,胆管选插采用三腔乳头切开刀,插管后回吸胆汁,随后注入对比剂,用于显示病变程度、病变位置以及周边胆管情况。所有患者均行乳头小切开,导丝置入后,选取适合的金属胆道支架,高位梗阻者若累及二级胆管,可将导丝分别插入左右肝内胆管内;低位梗阻者以支架露出乳头 0.5 cm 为宜,抵达预计部位后释放。术后两组患者均给予胰酶抑制剂、生长抑素、保肝退黄等对症支持治疗,常规检测血常规及肝功能。

1.3 观察指标

1.3.1 手术指标 记录两组手术时间、术中出血量、住院费用、住院时间、治疗成功率、黄疸缓解率等相关手术资料,其中以术后 7 d 胆红素水平判定,胆红素降低 $>90\%$ 以上,临床症状消失为治疗成功,以胆红素降低 35%~90%,临床症状显著改善为黄疸缓解。

1.3.2 肝功能指标 于术前、术后 1 d、术后 7 d 抽取所有患者空腹静脉血 4 mL,3000 r/min 离心 10 min,离心半径为 12 cm,取上清液置于 -70°C 冰箱中待测。采用 Au-1000 型全自动生化分析仪(日本 Olympus 公司)检测丙氨酸转氨酶(Alanine aminotransferase, ALT)、总胆红素(Total bilirubin, TBIL)、直接胆红素(Direct bilirubin, DBIL)水平。

1.3.3 并发症 观察患者术后并发症发生情况,包括出血、穿孔、胆瘘、急性胰腺炎、胆道感染等。

1.4 统计学方法

研究数据录入 SPSS 23.0 软件处理,计量资料用($\bar{x}\pm s$)表示,采用 t 检验,计数资料以率(%)表示,采用 χ^2 检验, $\alpha=0.05$ 设置成检验标准。

2 结果

2.1 两组患者相关手术指标比较

两组患者手术时间、术中出血量、治疗成功率、黄疸缓解率比较差异无统计学意义($P>0.05$),ERCP 患者住院费用少于 PTCD 组患者,住院时间亦短于 PTCD 组患者($P<0.05$),见表 1。

表 1 两组患者相关手术指标比较

Table 1 Comparison of operative indexes between two groups of patients

Groups	Operative time (min)	Intraoperative blood loss(mL)	Hospitalization expenses(ten thousand yuan)	Hospitalization time(d)	Treatment success rate[n(%)]	Jaundice relief rate [n(%)]
ERCP group (n=40)	75.79± 21.65	85.67± 12.95	2.13± 0.25	12.53± 1.87	36(90.00)	38(95.00)
PTCD group (n=40)	74.26± 19.02	84.14± 14.79	2.53± 0.36	16.98± 1.95	37(92.50)	39(97.50)
χ^2/t	0.336	0.492	5.772	10.417	0.157	0.346
P	0.738	0.624	0.000	0.000	0.692	0.556

2.2 两组患者不同时间点肝功能指标比较

两组患者术前 ALT、TBIL、DBIL 水平比较差异无统计学意义($P>0.05$), 两组患者术后 1 d、术后 7 d ALT、TBIL、DBIL

水平均较术前降低, 且两组患者术后 7 d 上述指标水平低于术后 1 d($P<0.05$), ERCP 组术后 1 d、术后 7 d ALT、TBIL、DBIL 水平与 PTCD 组比较差异无统计学意义($P>0.05$), 见表 2。

表 2 两组患者不同时间点肝功能指标比较($\bar{x} \pm s$)Table 2 Comparison of liver function indexes of two groups of patients at different time points($\bar{x} \pm s$)

Groups	ALT(U/L)			TBIL(μ mol/L)			DBIL(μ mol/L)		
	Before operation	1 d after operation	7 d after operation	Before operation	1 d after operation	7 d after operation	Before operation	1 d after operation	7 d after operation
ERCP group (n=40)	97.17± 10.15	77.85± 11.31*	58.09± 10.94**	352.31± 70.69	276.63± 54.05*	65.71± 21.11**	233.88± 41.19	175.22± 30.91*	57.36± 13.42**
PTCD group (n=40)	98.23± 13.04	83.24± 12.57*	59.98± 9.87**	351.67± 68.71	282.65± 57.36*	66.83± 25.14**	229.85± 52.37	177.15± 29.78*	58.32± 15.37**
t	0.406	2.016	0.811	0.041	0.483	0.214	0.383	0.284	0.298
P	0.686	0.047	0.420	0.967	0.630	0.831	0.703	0.773	0.767

Note: compared with before operation, * $P<0.05$; compared with 1d after operation, ** $P<0.05$.

2.3 两组患者术后并发症发生情况比较

($P>0.05$), 见表 3。

两组患者术后并发症总发生率比较差异无统计学意义

表 3 两组患者术后并发症发生情况比较[n(%)]

Table 3 Comparison of postoperative complications in the two groups of patients[n(%)]

Groups	Hemorrhage	Biliary tract infection	Acute pancreatitis	Bile leakage	Perforation	Total incidence
ERCP group(n=40)	3(7.50)	1(2.50)	2(5.00)	1(2.50)	1(2.50)	8(20.00)
PTCD group(n=40)	3(7.50)	2(5.00)	1(2.50)	0(0.00)	1(2.50)	7(17.50)
χ^2						0.082
P						0.775

3 讨论

据相关资料统计^[11,12],我国肝内胆管结石发病率约占全部胆结石患者的 16%,患者多表现为大便呈白陶土样、皮肤发黄等症状,诱发肝功能衰竭、严重感染等。肝脏作为机体消除内毒素的主要脏器,也是结石性梗阻性黄疸患者遭受毒素攻击的首要目标,故结石性梗阻性黄疸的治疗关键在于解除胆道梗阻、引流畅通、改善患者肝功能^[13,14]。随着微创技术的快速发展,介入治疗以其创伤小、操作简便、术后恢复快等优势被临床广泛使用^[15]。对于结石性梗阻性黄疸患者,置入支架支撑力大、组织相容性佳,且发生脱落、阻塞的可能性较小^[16]。但由于支架置入

不合适易再次发生胆管阻塞,故需根据患者具体情况选择合适的介入治疗方式^[17]。PTCD 术式是胆道引流基本手段,可迅速减轻胆管内压力,恢复干细胞功能,并将大量内毒素引流至体外,然而该术式仅能行对症治疗,无法取出胆道结石,且术后易发生引流管堵塞、胆汁丢失造成机体平衡代谢紊乱等相关并发症^[18,19]。ERCP 则可通过取出结石,解除患者梗阻状态,行对因治疗,然而 ERCP 对手术适应指征有一定的要求,常因插管不畅导致操作终止^[20,21]。

本次研究结果显示,两组患者手术时间、术中出血量、治疗成功率、黄疸缓解率比较差异无统计学意义。提示两种术式治疗效果相当,ERCP 术中取出结石、置入支架后迅速解除梗阻

现象,且对机体正常胆汁代谢途径影响较轻^[22]。PTCD 作为单纯的引流方式,可迅速将含有毒素的胆汁引流至体外,改善患者临床症状^[23]。但本研究表明 ERCP 患者住院费用、住院时间均少于 PTCD 组患者,这可能是由于 PTCD 穿刺通道上存在血管,易发生胆道出血,且术后若放置不准确,易引起感染、脱落等^[24]。而 ERCP 则可避免上述情况的发生,因其无需穿刺肝组织,减少了对肝脏的损伤,加之取出结石,对因治疗,加快临床症状的好转进程,术后恢复迅速,有效缩短住院时间,减少住院费用^[25]。本次研究结果还显示,两组患者术后不同时间点肝功能指标均有效改善,且 PTCD 组与 ERCP 改善效果无明显差异,提示 PTCD、ERCP 术式治疗结石性梗阻性黄疸,均可有效改善肝功能情况,究其原因,行 PTCD 术后,胆管压力减轻,肝细胞功能恢复,同时将含有毒素的胆汁引流至体外,减轻内毒素血症,有效改善机体循环状况。ERCP 术式穿刺时无需穿刺肝组织,减轻对机体肝脏的损伤,机体肝脏血流得以维持,最终降低 TBIL、ALT、DBIL 水平,有效提升肝脏代谢能力^[26,27]。另外两组患者术后并发症总发生率比较差异无统计学意义。提示两种术式安全性相当,然而陈保银^[28]等人的研究却认为,经 PTCD 术式术后并发症相对较少,这与本次研究结果不一致,这可能是因为 ERCP 术式过程中需持续注入二氧化碳以维持十二指肠段操作,短时间内难以被机体吸收,患者存在个体差异性,加之 ERCP 对施术者要求较高,恐因操作不当而引起术后并发症发生率增多^[29,30]。建议行 ERCP 术后患者均给予禁食、抑制胰酶、止血、抗炎、护肝等对症治疗,以减少患者术后并发症发生情况。

综上所述,PTCD、ERCP 治疗结石性梗阻性黄疸疗效相当,均可有效改善患者肝功能,但 ERCP 可明显减少患者的住院时间,减轻患者的住院费用。

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