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·专题研究·

转移胆管瓣修补肝门胆管狭窄在肝胆管结石治疗中的应用

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摘 要

背景与目的：肝胆管结石病病情复杂，术后复发率高，需反复多次手术。在病程晚期可继发胆汁性肝硬化、甚至肝内胆管癌等，严重影响患者生活质量。本研究主要探讨转移胆管瓣修补肝门胆管狭窄在肝胆管结石治疗中的安全性和效果。

方法：回顾性分析 2016 年 1 月 1 日—2018 年 12 月 31 日湖南省人民医院收治的 36 例肝门部胆管狭窄患者的临床资料。观察患者手术时间、术中失血量、术后住院时间、术后并发症、吻合口再狭窄情况。

结果：8 例患者为首次手术，另 28 例患者曾行胆囊切除、胆总管探查等手术 1~4 次，所有患者均采用转移胆管瓣修补肝门部胆管狭窄，行胆管盆式 Roux-en-Y 内引流术。其中合并右后叶切除 3 例、左肝外叶切除 6 例，肝方叶切除 11 例。无围术期死亡病例。手术历时（256.4 ± 98.2）min，术中失血量（218.5 ± 68.1）mL，术后住院（10.3 ± 3.2）d；3 例（8.3%）术后发现残余少量结石；术后出现轻微胆汁漏 1 例，不完全性肠梗阻 1 例，腹腔积液 2 例，胸腔积液 2 例，均保守治疗治愈，未出现 Clavien-Dindo IIIa 级以上并发症。所有患者出院后采用门诊、电话随访，中位随访时间 23.6（12~46）个月。2 例出现反流性胆管炎，均自行缓解，未发现有吻合口再狭窄的患者；3 例（8.3%）发现结石复发。

结论：转移胆管瓣修补肝门胆管狭窄治疗肝胆管结石安全有效，可供临床借鉴。

关键词 胆结石；胆管；缩窄，病理性；胆管肠吻合术，肝

中图分类号：R657.4

Application of biliary flap transposition hilar biliary stricture repair in treatment of hepatolithiasis

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Abstract

Background and Aims: Hepatolithiasis is a complicated pathological condition, with a high postoperative recurrence rate, requiring repeated operations. In the late course of the disease, biliary cirrhosis and even intrahepatic cholangiocarcinoma may occur, which seriously affect the patients' quality of life. This study was conducted to investigate the safety and efficacy of biliary flap transposition hilar biliary stricture repair in treatment of hepatolithiasis.

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Methods: The clinical data of 36 patients with hilar biliary stricture treated in Hunan Provincial People's Hospital from January 1, 2016 to December 31, 2018 were retrospectively analyzed. The clinical variables that included the operative time, intraoperative blood loss, hospitalization time, postoperative complications, and anastomotic restenosis observed.

Results: Of the patients, 8 cases had the initial surgery, and the other 28 cases had surgery such as cholecystectomy, and common bile duct exploration once to 4 times previously. All patients underwent hilar biliary stricture repair by biliary flap transposition, and biliary basin Roux-en-Y internal drainage. Meanwhile, 3 cases underwent the right posterior lobe resection, 6 cases underwent the left lateral lobe resection, and 11 cases underwent the quadrate lobe resection. No perioperative death occurred. The average operative time was (256.4±98.2) min, the average intraoperative blood loss was (218.5±68.1) mL, and the average length of hospital stay was (10.3±3.2) d. After operation, residual stones were found in 3 cases (8.3%), mild bile leakage occurred in 1 case, partial intestinal obstruction occurred in 1 case, abdominal fluid collection occurred in 2 cases, and pleural effusion occurred in 2 cases, which were all resolved by conservative treatment, and no complication greater than Clavien-Dindo IIIa was noted. All patients were followed up by outpatient examination and telephone interview. The median follow-up time was 23.6 (12–46) months. Reflux cholangitis occurred in 2 patients, which were spontaneously resolved, and no anastomotic restenosis was found. Stone recurrence was found in 3 cases (8.3%).

Conclusion: Biliary flap transposition hilar biliary stricture repair is safe and effective for the treatment of hepatolithiasis, and it can be used for reference in clinical paractice.

Key words Cholelithiasis; Bile duct; Constriction, Pathologic; Portoenterostomy, Hepatic

CLC number: R657.4

肝胆管结石在我国发病率居世界前列，达2%~25%[1]，占胆石症患者38%[2-3]，因其高残余率、高复发率等，常需多次手术，一直是肝胆外科的棘手问题[4-7]，而肝胆管结石的发生发展与胆道的炎症、狭窄等因素密切相关[8-10]，胆道的狭窄和结石的发生互为因果，而且是结石复发的重要原因[11-13]。如何解除胆管狭窄，一直是肝胆外科的热点与难点[14]。狭窄胆管切开整形后修复的方式很多，包括采用带蒂胆囊瓣、肝圆韧带、空肠瓣、胃瓣等。但是受病变的原因及程度的影响，实际操作困难，远期疗效欠佳[15]。2016年1月1日—2018年12月31日湖南省人民医院收治的36例肝门胆管狭窄患者，采用转移胆管瓣修补肝门胆管狭窄、肝胆管盆式Roux-en-Y内引流术，疗效满意，报道如下。

1 资料与方法

1.1 一般资料

本组36例，男15例，女21例；年龄44~74岁，平均年龄（52.6±11.5）岁。主要临床表现为反复畏寒发热，上腹部疼痛，黄疸。本组患者既往手术0~4次，平均手术2.3次，手术方式主要包括胆囊切除，胆道探查，肝方叶切除、左肝外叶切除、右后叶切除、胆肠内引流等。入选标准：(1) 已行转移胆管瓣修补肝门胆管狭窄的病例；(2) 术前肝功能评分为Child A级；(3) 术前影像学检查诊断为肝胆管结石、肝门部狭窄，临床资料完整。排除标准：(1) 术中快速病检显示胆管有癌变；(2) 行大范围肝切除（半肝、肝三叶切除）病例；(3) 合并有糖尿病、先天性红斑狼疮、肾功能不全、心脏支架置入者；(4) 合并有精神疾病者。所有患者术前都签署手术知情同意书。

1.2 术前评估

术前常规完善腹部B超、CT、MRI+MRCP等检查（图1）。明确结石的分布，胆管走形，狭窄胆管位置，评估肝硬化程度，肝脏形态及体积。

1.3 手术方法

全麻后常规消毒铺巾，反“L”形切口常规入腹、或切除既往手术瘢痕入腹，分离腹腔内粘连，切开胆总管探查取石，发现肝门部胆管狭窄，先向左侧“四边法”[16]切开左肝管口狭窄、敞开左肝管，并顺势切开右肝管口显露肝内二级胆管的开口，直视下取石并配合术中胆道镜、B超

检查尽可能取尽结石。胰腺上缘横断胆管，将远断端剪一圈送快速病检，残端以4-0可吸收线连续往返缝合关闭；游离已经敞开的肝外胆管作为胆管瓣，转移胆管瓣向左侧或右侧、以4-0可吸收线与左肝管拼合整形（黏膜对黏膜、保持内壁光滑）、形成胆管盆（图2），解除肝门部胆管狭窄，再行胆肠Roux-en-Y内引流。

若因肝形态比例失调致肝门内陷，肥大的肝方叶覆盖压迫肝门胆管，影响胆道引流，可切除肝方叶，充分显露肝门部狭窄胆管，其他操作与上述相同。

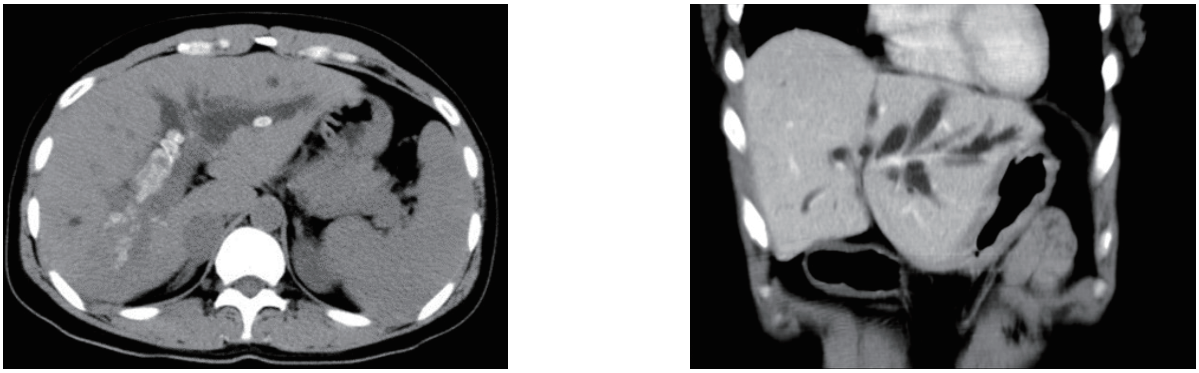

图 1　术前 CT 平扫可见肝内胆管多发结石伴胆管扩张、积气，肝形态比例失调

Figure 1　Preoperative CT plain scan showing multiple intrahepatic stones with gas accumulation and bile duct dilatation, and morphological changes of the liver

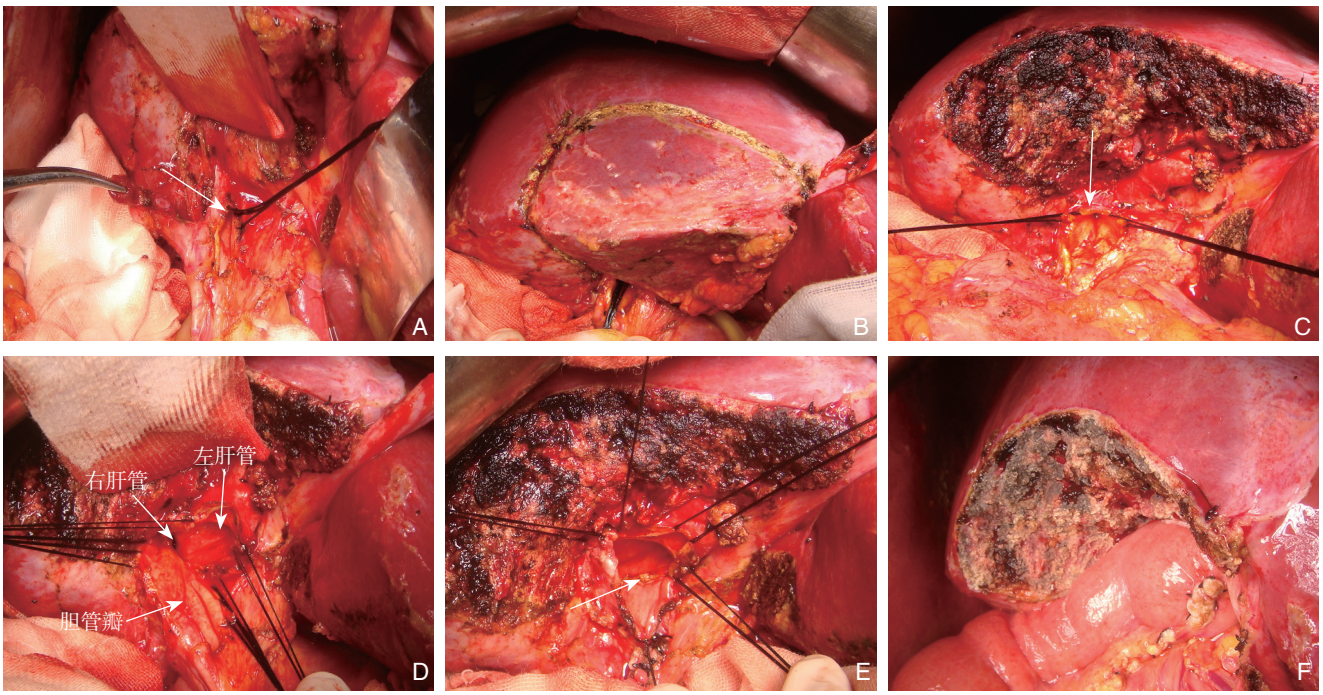

图 2　术中图片　A：肥大肝方叶压迫肝门，难以显露狭窄胆管；B：切除部分肝方叶以充分显露狭窄胆管；C：箭头所示为切除部分方叶后，狭窄胆管得以显露，“四边法”打开狭窄胆管；D：切开狭窄的左、右肝管，游离胆管瓣；E：转移胆管瓣向左，与左肝管拼合整形，形成胆管盆；F：行胆肠 Roux-en-Y 内引流

Figure 2　Intraoperative views　A: Hypertrophic quadrate lobe of the liver covering the porta hepatis; B: Resection of the hepatic quadrate lobe to fully expose the stenotic bile duct; C: Arrow pointing the exposure of the stenotic bile ducts after quadrate lobe resection, and opening the stenotic bile ducts with “four-sided method”; D: Cutting the left and right hepatic ducts to dissociate the biliary flap; E: Transposing the biliary flap to the left side to combine the left hepatic duct to create a biliary basin; F: Roux-en-Y internal internal drainage

1.4 观察指标

手术时间、术中失血量、术后住院时间、术后并发症、吻合口再狭窄、结石残余等情况。

1.5 随访

所有患者通过门诊、电话随访，复查项目包括血常规、肝功能、腹部B超或CT等，随访截止日期为2019年12月31日。

2 结 果

2.1 术中情况

36例患者均采用转移胆管瓣修补肝门胆管狭窄后行胆肠内引流，其中联合萎缩的右后叶切除3例、左肝外叶切除6例，联合肥大的肝方叶切除11例，3例患者既往曾行胆肠内引流术（胆管空肠侧侧吻合），行内引流重建术。手术历时（256.4±98.2）min，术中失血量（218.5±68.1）mL。

2.2 术后情况

术后平均住院日（10.3±3.2）d，术后出现胆汁漏1例，不完全性肠梗阻1例，腹腔积液2例，胸腔积液2例，均保守治疗治愈，未出现Clavien-Dindo IIIa级[17]以上并发症，无围术期死亡病例。术后复查有3例仍有少量结石残余，残石率8.3%。

2.3 随访情况

本组所有患者出院后采用门诊、电话随访，随访率100%。中位随访时间23.6（12~46）个月。所有患者术后均恢复正常生活、工作；复查CT示胆肠吻合口通畅，肝内胆管扩张、积气较术前好转（图3）；有2例偶发反流性胆管炎，能自行缓解；3例因腹痛腹胀，发热等再次就诊，发现结石复发，复发率8.3%。

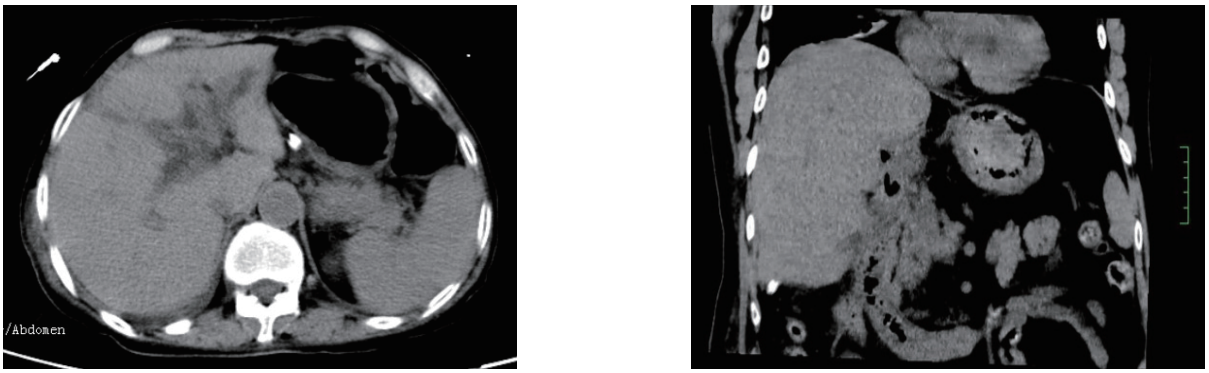

图3 术后复查CT结果显示结石基本取尽；胆肠吻合口通畅，胆管扩张、积气较术前好转

Figure 3 Postoperative CT scan showing complete removal of stones, patent biliary-enteric anastomosis, and improvement of the bile duct dilatation and gas accumulation

3 讨 论

我国是肝胆管结石的高发地区[18]，特别在我国中西部欠发达地区，仍是多发病、常见病，且结石的复发率较高，达30%~60%[19-20]。手术是目前治疗肝胆管结石的主要治疗方式[21-22]。早年黄志强院士提出其治疗原则：取净结石，去除病灶，解除狭窄，通畅引流。其核心内容应该是解除狭窄，因为狭窄不解除可导致：(1) 结石取不净；(2) 引流不通畅；(3) 反复发作胆管炎；(4) 受累胆管、肝组织纤维化增生恶变等。肝门部胆管狭窄其后果更严重，常可出现肝脏萎缩-肥大征、肝门移位、肝脓肿，甚至肝硬化门静脉高压症、肝功能衰竭等严重并发症[23-26]。

本组患者术前反复出现畏寒发热、上腹部疼痛、黄疸等，有的虽经4次手术、甚至切除肝方叶、左肝外叶、右肝后叶，仍然症状依旧、治疗效果不佳，究其原因还是肝门部狭窄没有解除、没有很好的敞开肝门、引流不通畅所致。3例患者既往曾行胆肠内引流术，由于肝门部的狭窄没有解除，肝内胆管仍堆满了结石、反复发作胆管炎，这也是再手术的主要原因[27]。

在上个世纪90年代，笔者中心提出以胆管拼合整形为基础的肝胆管盆氏内引流[28]。转移肝总管瓣修补肝门狭窄是对其内容的丰富和补充。操作主要包括：显露肝门→切开肝外胆管→敞开肝门→直视下取石→术中胆道镜检查→横断肝总管→转移胆管瓣拼合形成胆管盆→胆肠内引流。转移胆管瓣的制作要点：(1) 排除胆管组织癌变或非典型性增生的情况；(2) 横断胆管前，先解除肝

门的狭窄，充分的敞开肝门，观察所需胆管瓣长度，再横断胆管；⑶ 横断胆管的操作技术：扪触到肝固有动脉（PHA）→PHA与胆总管之间进行分离→找到门静脉（PV）前壁、保护好PV→中弯血管钳在胆总管后方、PV前方由内向外穿出→扪触胆总管右后方→排除变异的肝右动脉→按照预估胆管瓣长度横断胆总管；⑷ 胆总管周围慢性炎症重、局部结构不清、难以找到PV时可以使用胆管壁外注射生理盐水的方法进行胆管的分离。

有的患者肝方叶肥大，肝门深埋，虽然方叶肝实质正常，但其危害在于：⑴ 不利于肝门显露和切开肝门胆管的手术操作；⑵ 即便向上牵开肝方叶完成胆肠吻合，术后肥大的肝方叶仍会压迫胆肠吻合口不利于胆汁通畅引流，故这些患者需要先切除肝方叶。本组有11例属于这种情况，切除肝方叶便于敞开肝门[29]。

敞开肝门胆管的操作，常从左侧开始，因为左肝管较长且易与肝总管形成反向成角，切开狭窄的左肝管口，常可以显露右侧二级胆管的开口，既方便取石、也便于转移胆管瓣与左肝管拼合；如果左右肝管均有狭窄，先使用“胆囊床途径”、“肝圆韧带途径”切开左右肝管口的狭窄[30]，充分敞开肝门；观察左右肝管的下切缘与胆总管切缘的关系，通常只有一侧“反向成角”，胆管瓣转移向“反向成角”一侧，再进行拼合整形。

逐支胆管直视下检查和取石，常可以将肝段的胆管结石取净，加上宽阔的肝胆管盆、牢固的胆肠吻合，故术中常不需放置T管。但关腹前一定要注意空肠是否胀气，若胀气要探查回肠，查找空肠胀气的原因，松解肠粘连，减少术后反流性胆管炎的发生。

转移胆管瓣与肝管的拼合常只转移向一侧，多为左侧，既可以达到修补肝门狭窄的目的，也可以减少胆管盆的张力。采用4-0可吸收缝线，按“外进外出”原则连续缝合，线结打在胆管盆外，保持盆内壁光滑平整。胆管空肠吻合采用端侧吻合，4-0可吸收线黏膜对黏膜外翻缝合，保持内壁光滑。

对于肝胆管结石合并肝门部胆管狭窄的患者，如何解除狭窄，降低结石残留的发生率一直是胆道外科医生追求的目标[31]。结合本组病例，作者认为采用转移胆管瓣修补肝门部胆管狭窄是安全有效的，可供临床借鉴。

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