

# 门静脉高压症食管旁静脉的 CT 检查解剖特征及临床意义

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**【摘要】 目的** 探讨门静脉高压症患者食管旁静脉的 CT 检查解剖特征及临床意义。**方法** 采用回顾性描述性研究方法。收集 2018 年 1 月至 2021 年 6 月宁夏回族自治区人民医院收治的 173 例门静脉高压症患者的临床资料;男 124 例,女 49 例;中位年龄为 47 岁,年龄范围为 22~71 岁。观察指标:(1)术前 CT 检查情况。(2)手术情况。(3)随访情况。采用门诊随访,术后 6 个月内,每 3 个月随访 1 次,之后每 6 个月随访 1 次,了解患者手术疗效。随访时间截至 2021 年 6 月。偏态分布的计数资料以 *M*(范围)表示。计数资料以绝对数表示。**结果** (1)术前 CT 检查情况:门静脉高压症患者食管旁静脉 CT 检查显示率为 52.60%(91/173)。173 例患者中,82 例未显示食管旁静脉,91 例显示存在食管旁静脉。91 例显示存在食管旁静脉的患者中,食管旁静脉曲张 46 例,粗食管旁静脉 24 例,细食管旁静脉 21 例。91 例显示存在食管旁静脉的患者中,无食管静脉曲张(EV)8 例,合并 EV 83 例。83 例合并 EV 患者中,食管旁静脉单独汇入奇静脉或半奇静脉 44 例,膈肌上形成食管旁静脉曲张并与 EV 汇合后共同汇入奇静脉 39 例。(2)手术情况:173 例患者顺利完成手术,其中单纯脾切除术 8 例,脾切除联合改良彻底断流术 86 例,脾切除联合重建自发性胃肾分流断流术 35 例,脾切除联合保留食管旁静脉断流术 41 例,脾切除联合食管旁静脉环缩术 3 例。173 例患者无手术死亡,67 例发生并发症(3 例单纯脾切除术、29 例脾切除联合改良彻底断流术、11 例脾切除联合重建自发性胃肾分流断流术、23 例脾切除联合保留食管旁静脉断流术、1 例脾切除联合食管旁静脉环缩术)。(3)随访情况:173 例患者中,159 例获得随访,随访时间为 6~42 个月,中位随访时间为 28 个月。7 例单纯脾切除术获得随访患者中,无 EV 6 例,EV 复发 1 例。79 例脾切除联合改良彻底断流术获得随访患者中,无 EV 5 例,EV 轻、中度残留 67 例,EV 重度残留 5 例,EV 复发 1 例,EV 复发破裂出血 1 例。34 例脾切除联合重建自发性胃肾分流断流术获得随访患者中,无 EV 7 例,EV 轻、中度残留 27 例。36 例脾切除联合保留食管旁静脉断流术患者中,无 EV 4 例,EV 轻、中度残留 21 例,EV 重度残留 5 例,EV 复发 4 例,EV 复发破裂出血 2 例。3 例脾切除联合食管旁静脉环缩术获得随访患者中,EV 轻、中度残留 2 例,EV 重度残留 1 例。**结论** 门静脉高压症患者食管旁静脉 CT 检查显示率>50%,血管内径及走行方式不同;食管旁静脉的 CT 检查解剖特征可以为制订手术方式提供参考。

**【关键词】** 高血压; 门静脉; 食管旁静脉; 穿静脉; 食管静脉曲张; 改良彻底断流术; 环缩术

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## CT examination anatomical features and clinical significance of paraesophageal vein in portal hypertension

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**【 Abstract 】 Objective** To investigate the computed tomography (CT) examination anatomical features and clinical significance of paraesophageal vein (PEV) in portal hypertension. **Methods** The retrospective and descriptive study was conducted. The clinical data of 173 patients with portal hypertension who were admitted to the People's Hospital of Ningxia Hui Autonomous Region from January 2018 to June 2021 were collected. There were 124 males and 49 females, aged from 22 to 71 years, with a median age of 47 years. Observation indicators: (1) preoperative CT examinations; (2) surgical situations; (3) follow-up. Follow-up was conducted using outpatient examination to detect surgical effects once every 3 months within postoperative 6 months and once every 6 months after postoperative 6 months. The follow-up was up to June 2021. Measurement data with skewed distribution were represented as *M*(range) and count data were described as absolute numbers.

**Results** (1) Preoperative CT examinations. The CT detection rate of PEV in the 173 portal hypertension patients was 52.60%(91/173). Of 173 patients, 82 cases were negative with PEV and 91 cases were positive with PEV. Of the 91 patients who were positive with PEV, there were 46 cases with paraesophageal varices, 24 cases with thick PEV, 21 cases with thin PEV, 8 cases without esophageal varices and 83 cases accompanied with esophageal varices. Of the 83 patients who were accompanied with esophageal varices, there were 44 cases with PEV converged alone with azygos vein or semiazygos vein, 39 cases with paraesophageal varices formed above the diaphragm confluent with esophageal varices into azygos vein. (2) Surgical situations. All the 173 patients underwent surgery successfully, including 8 cases undergoing splenectomy, 86 cases undergoing splenectomy combined with modified complete devascularization, 35 cases undergoing splenectomy combined with spontaneous gastroduodenal shunt reconstructing devascularization, 41 cases undergoing splenectomy combined with PEV preserving devascularization and 3 cases undergoing splenectomy combined with PEV ring constriction. None of 173 patients had surgical relative death, 67 cases had complications, including 3 cases undergoing splenectomy, 29 cases undergoing splenectomy combined with modified complete devascularization, 11 cases undergoing splenectomy combined with spontaneous gastroduodenal shunt reconstructing devascularization, 23 cases undergoing splenectomy combined with PEV preserving devascularization and 1 case undergoing splenectomy combined with PEV ring constriction underwent complications. (3) Follow-up. Of the 173 patients, 159 cases were followed up for 6 to 42 months, with a median follow-up time of 28 months. In the 7 cases undergoing splenectomy who were followed up, there were 6 cases without esophageal varices and 1 case with recurrence of esophageal varices. In the 79 cases undergoing splenectomy combined with modified complete devascularization who were followed up, there were 5 cases without esophageal varices, 67 cases with mild to moderate residual of esophageal varices, 5 cases with severe residual of esophageal varices, 1 case with recurrence of esophageal varices and 1 case with recurrence of esophageal varices hemorrhage. In the 34 cases undergoing splenectomy combined with spontaneous gastroduodenal shunt reconstructing devascularization who were followed up, there were 7 cases without esophageal varices and 27 cases with mild to moderate residual of esophageal varices. In the 36 cases undergoing splenectomy combined with PEV preserving devascularization who were followed up, there were 4 cases without esophageal varices, 21 cases with mild to moderate residual of esophageal varices, 5 cases with severe residual of esophageal varices, 4 cases with recurrence of esophageal varices and 2 cases with recurrence of esophageal varices hemorrhage. In the 3 cases undergoing splenectomy combined with PEV ring constriction who were followed up, there were 2 cases with mild to moderate residual of esophageal varices, 1 case with severe residual of esophageal varices. **Conclusions** The CT detection rate of PEV in portal hypertension patients is >50% and the internal diameter and distribution of blood vessels are different in patients. CT examination anatomical features of PEV can be used to guide the formulation of surgical methods.

**【 Key words 】** Hypertension; Portal vein; Paraesophageal vein; Penetrating vein; Esophageal varices; Modified complete devascularization; Ring constriction

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食管旁静脉是门静脉高压症门奇分流通路的侧支血管,由胃左静脉分出后支沿食管旁上行穿过食管裂孔进入胸腔汇入奇静脉或半奇静脉<sup>[1]</sup>。食管旁静脉对内镜治疗或断流术后食管静脉曲张(esophageal varices, EV)复发的影响存在争议<sup>[2-4]</sup>。近年来随着EUS以及超高速CT检查应用增多,针对食管旁静脉及其穿静脉的研究也越来越多,但食管旁静脉对手术方式选择的影响尚不明确<sup>[4-9]</sup>。本研究回顾性分析2018年1月至2021年6月宁夏回族自治区人民医院肝胆外科收治173例门静脉高压症患者的临床资料,探讨门静脉高压症食管旁静脉的CT检查解剖特征及临床意义。

## 资料与方法

### 一、一般资料

采用回顾性描述性研究方法。收集173例门静脉高压症患者的临床资料;男124例,女49例;中位年龄为47岁,年龄范围为22~71岁。173例患者中,有上消化道出血史102例(内镜下硬化剂注射治疗后复发出血81例、药物治疗后复发出血21例);71例无上消化道出血史患者均有重度脾肿大、脾功能亢进;肝功能Child-Pugh分级为A级或B级;并发肝性脑病5例。本研究通过本院医学伦理委员会批准,批号为[2016]伦审[科研]第(031)号。患者及家属均签署知情同意书。

### 二、纳入标准和排除标准

纳入标准:(1)有消化道出血史或有重度EV或有重度脾肿大、脾功能亢进。(2)术前末次肝功能Child-Pugh分级为A级或B级。(3)无严重心、肺功能障碍。(4)临床资料完整。

排除标准:(1)术前末次肝功能Child-Pugh分级为C级。(2)严重凝血功能障碍。(3)有腹膜炎及恶性肿瘤。(4)临床资料缺失。

### 三、影像学检查

应用256层急速CT(荷兰Philips公司产品)行门静脉增强扫描,扫描参数:管电压为120 kV,螺距为0.981,探测器宽度为8 cm,层厚为0.625 mm,层间距为0.625 mm,对比剂采用碘普罗胺(370 mgI/mL),注射总量为80 mL,注射速率为4.5 mL/s。动脉期扫描时间采用对比剂智能追踪技术监测,监测点位于腹主动脉起始部,注射对比剂10 s后启动监测,当监测阈值到达150 HU后5 s开始动脉期扫描,动脉期结束25 s后门静脉期扫描,获得图像传至

Philips星云工作站。通过多平面重建及调整最大密度投射厚度,观察食管旁静脉及食管静脉情况、测定食管旁静脉主干的轴位内径。

### 四、手术方法

根据CT检查结果、肝功能及脾功能亢进程度综合评估制订手术方案。(1)无EV的重度脾功能亢进患者行单纯脾切除术。(2)无食管旁静脉、细食管旁静脉以及食管旁静脉汇入EV患者行改良彻底断流术。即从胃纵轴在胃角处的垂直线开始紧贴胃向上断流至贲门水平,再从贲门后方紧贴膈肌脚从左向右离断肝胃韧带及其内在的胃左动静脉分支至肝缘附着处,不游离食管。(3)伴有自发性胃肾分流患者行脾切除联合重建自发性胃肾分流断流术<sup>[10]</sup>。(4)对合并EV的粗食管旁静脉或食管旁静脉曲张患者行脾切除联合保留食管旁静脉断流术<sup>[11]</sup>。(5)食管旁静脉成为门静脉系统主要流出道合并肝性脑病患者行脾切除联合食管旁静脉环缩术,术中测压使环缩后的门静脉自由压力维持在24~28 cmH<sub>2</sub>O(1 cmH<sub>2</sub>O=0.098 kPa)。

### 五、观察指标及评价标准

观察指标:(1)术前CT检查情况包括食管旁静脉显示情况及合并EV情况。(2)手术情况:手术方式、术后并发症。(3)随访情况:获得随访患者例数,随访时间,手术疗效(EV残留程度、EV复发、EV复发出血情况)。

评价标准:(1)食管旁静脉曲张为食管旁静脉局部明显扩张(主干的轴位内径 $\geq 2$  mm)并迂曲成团。(2)粗食管旁静脉为主干的轴位内径 $\geq 2$  mm,没有迂曲成团。(3)细食管旁静脉为主干的轴位内径 $< 2$  mm,没有迂曲成团。(4)术后EV残留程度为术后3个月行内镜检查,根据EV主干的轴位内径、血管走行及是否有红色征判断EV残留程度(轻、中、重度)<sup>[12]</sup>。(5)术后EV复发为术后3个月后的内镜检查结果( $\geq 2$ 次)显示EV消失后再次出现或EV严重程度较术后第3个月的复查情况加重。(6)手术疗效包括EV残留程度、EV复发情况、破裂出血情况。

### 六、随访

采用门诊方式进行随访。术后6个月内,每3个月随访1次,之后每6个月随访1次,了解患者手术疗效。随访时间截至2021年6月。

### 七、统计学分析

应用SPSS 19.0统计软件进行分析。偏态分布的计数资料以M(范围)表示。计数资料以绝对数表示。

## 结 果

### 一、术前 CT 检查情况

门静脉高压症患者食管旁静脉 CT 检查显示率为 52.60%(91/173)。173 例患者中,82 例未显示食管旁静脉,91 例显示存在食管旁静脉(图 1)。91 例显示存在食管旁静脉的患者中,食管旁静脉曲张 46 例,粗食管旁静脉 24 例(膈肌上食管旁静脉形成大口径穿静脉汇入 EV 6 例,膈肌下食管旁静脉高位折返汇入 EV 4 例,食管旁静脉与食管静脉无明显穿静脉相交通 14 例),细食管旁静脉 21 例。见图 2~6。

91 例显示存在食管旁静脉的患者中,无 EV 8 例,合并 EV 83 例。83 例合并 EV 患者中,食管旁静脉单独汇入奇静脉或半奇静脉 44 例(3 例食管旁静脉成为门静脉主要流出道),膈肌上形成食管旁静脉曲张并与 EV 汇合后共同汇入奇静脉 39 例。见图 7,8。

### 二、手术情况

173 例患者顺利完成手术,其中单纯脾切除术 8 例,脾切除联合改良彻底断流术 86 例,脾切除联合重建自发性胃肾分流断流术 35 例,脾切除联合保留食管旁静脉断流术 41 例,脾切除联合食管旁静脉环缩术 3 例。

173 例患者无手术死亡,67 例发生并发症。8 例单纯脾切除术患者中 3 例发生并发症(门静脉血栓 2 例、肝性脑病 1 例)。86 例脾切除联合改良彻底断流术患者中 29 例发生并发症(门静脉血栓 24 例,腹腔内感染 2 例,肝性脑病、肺栓塞、腹腔内出血需行二次手术各 1 例)。35 例脾切除联合重建自发性胃肾分流断流术患者中 11 例发生并发症,均为术后门静脉血栓。41 例脾切除联合保留食管旁静脉断流术患者中 23 例发生并发症(术后门静脉血栓 13 例,吞咽疼痛 8 例,腹腔内感染、腹腔内出血需行二次手术各 1 例)。3 例脾切除联合食管旁静脉环缩术患者中 1 例发生并发症,为门静脉血栓。

### 三、随访情况

173 例患者中,159 例获得随访,随访时间为 6~42 个月,中位随访时间为 28 个月。7 例单纯脾切除术获得随访患者中,无 EV 6 例(图 9),EV 复发 1 例。79 例脾切除联合改良彻底断流术获得随访患者中,无 EV 5 例,EV 轻、中度残留 67 例(图 10),EV 重度残留 5 例,EV 复发 1 例,EV 复发破裂出血 1 例。34 例脾切除联合重建自发性胃肾分流断流术获得

随访患者中,无 EV 7 例,EV 轻、中度残留 27 例。36 例脾切除联合保留食管旁静脉断流术患者中,无 EV 4 例,EV 轻、中度残留 21 例,EV 重度残留 5 例(图 11),EV 复发 4 例,EV 复发破裂出血 2 例。3 例脾切除联合食管旁静脉环缩术获得随访患者中,EV 轻、中度残留 2 例,EV 重度残留 1 例。

## 讨 论

### 一、食管旁静脉与 EV 的关系

食管旁静脉是门静脉高压症自发性门奇分流通路的侧支血管。曾经学术观点认为与 EV 不同,食管旁静脉因具有分流作用可降低门静脉压力,可防止治疗后 EV 复发,因此,国内外较多学者曾倡导在断流手术中紧贴食管离断穿静脉,保护食管旁静脉使其完整进入胸腔<sup>[11,13-18]</sup>。然而,胸腔内食管旁静脉和 EV 间也存在穿静脉。Sugiura 和 Futagawa<sup>[19]</sup>在开展广泛食管周围血管离断术时,将胸段 12~18 cm 食管周围的 30~50 条穿静脉离断结扎,在联合腹部断流后 EV 消失率高达 97%。该手术因创伤过大、病死率较高而被废弃,但手术疗效证明胸段食管周围存在大量穿静脉及其离断后的显著效果。在经腹腔断流时保留食管旁静脉虽然具有降压作用,但也可通过胸段食管穿静脉造成治疗后 EV 残留或复发。Irisawa 等<sup>[20]</sup>的研究结果显示:内镜治疗后 EV 复发患者中,重度食管旁静脉、穿静脉数量以及大口径穿静脉数量明显多于未复发患者。更多研究结果显示:粗食管旁静脉以及穿静脉是内镜治疗后 EV 复发的独立危险因素<sup>[21-22]</sup>。

### 二、CT 检查在评估食管旁静脉与 EV 中的作用

近年来,CT 检查评估 EV 严重程度并预测其出血风险临床运用越来越广泛<sup>[23-27]</sup>。本研究结果显示:门静脉高压症患者食管旁静脉的 CT 检查显示率为 52.60%(91/173),高于其他研究的 22%~38%<sup>[7-9]</sup>。进一步观察发现:食管旁静脉内径不同,占比最多的为食管旁静脉曲张,其次是粗食管旁静脉,最少的为细食管旁静脉。

对于食管旁静脉与膈肌上 EV 的解剖关系,本研究结果显示:173 例患者中,39 例食管旁静脉在膈肌上形成食管旁静脉曲张与局部重度 EV 汇合,在食管后方以迂曲侧支汇入奇静脉。这说明门静脉血流经食管旁静脉途径的分流量有限且可能经穿静脉汇入 EV 后再汇入奇静脉,从而造成局部 EV 加重。但 CT 检查的缺陷是无法辨别静脉曲张团间



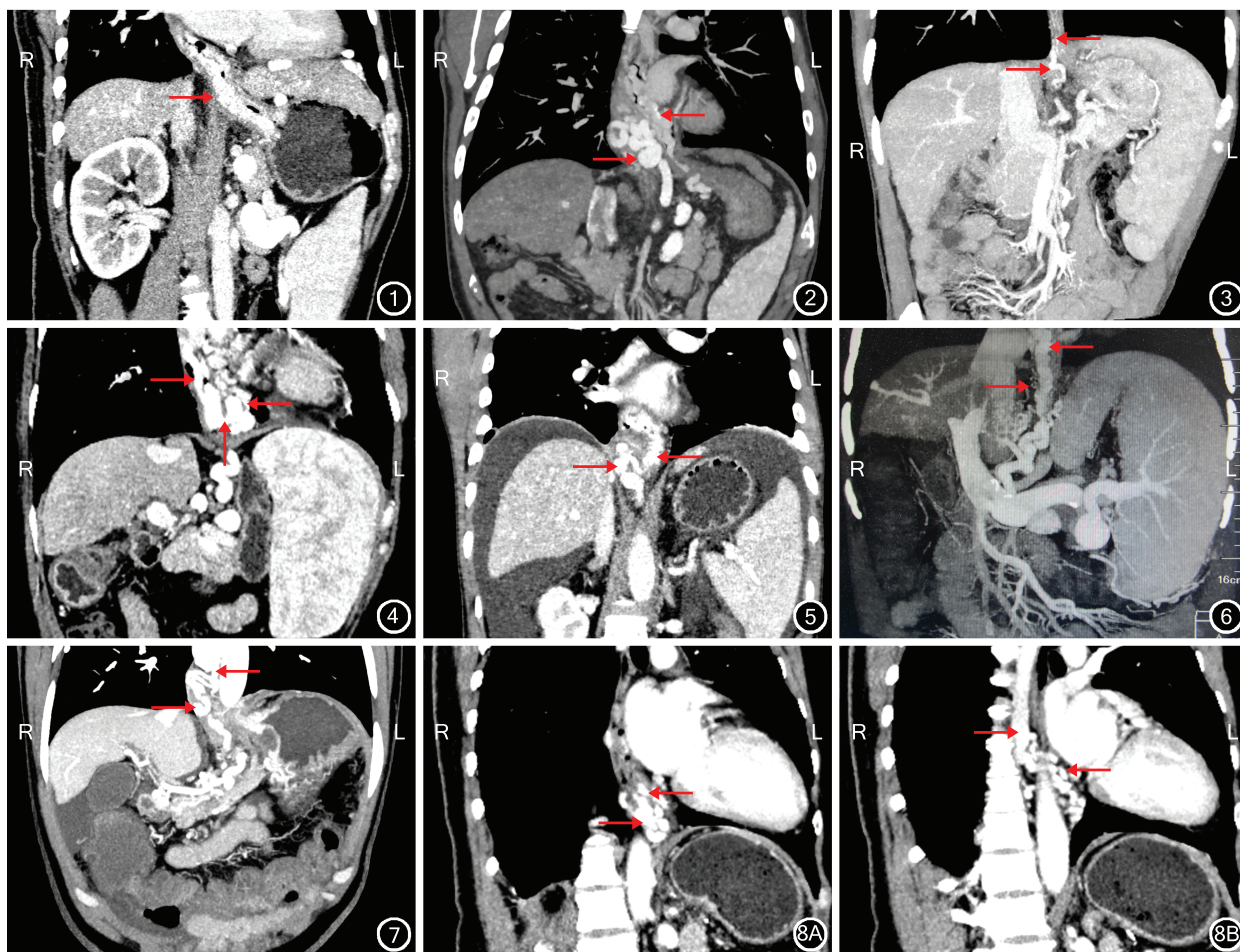


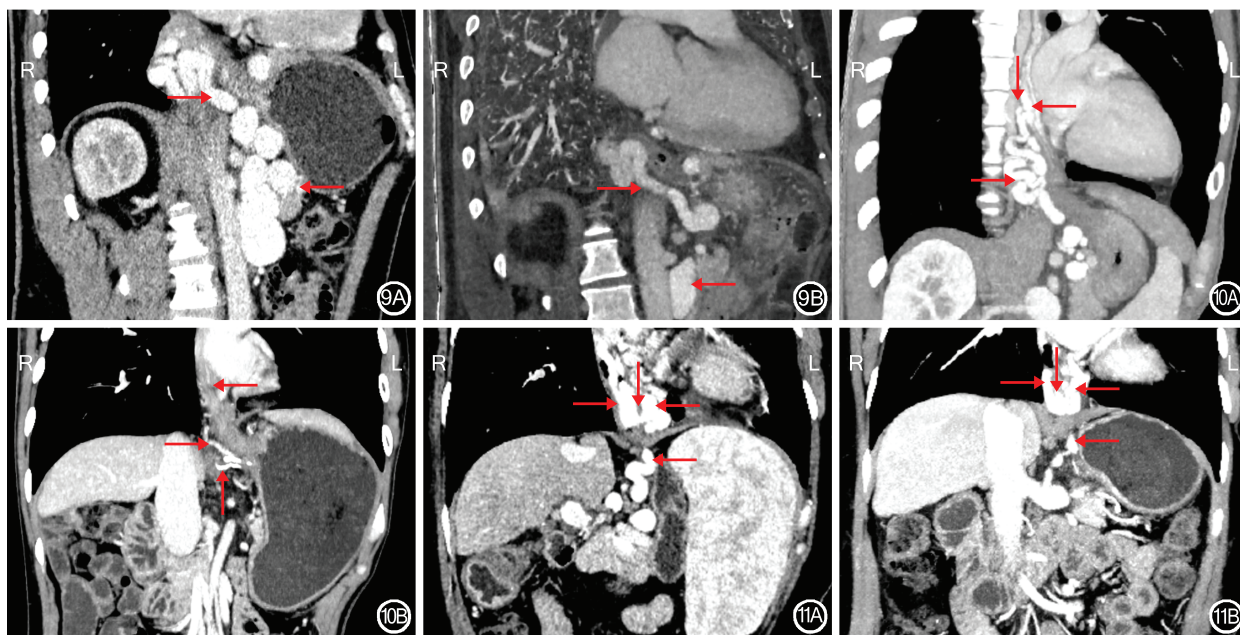
图1 CT检查结果冠状斜位显示食管静脉曲张(→) 图2 CT检查结果冠状斜位显示食管旁静脉曲张(→)和重度食管静脉曲张(←) 图3 CT检查结果冠状斜位显示粗食管旁静脉(←)和重度食管静脉曲张(→) 图4 CT检查结果冠状位显示膈肌上食管旁静脉(→)和食管静脉曲张(←)以及两者之间的大口径穿静脉(↑) 图5 CT检查结果冠状位显示假性食管旁静脉,膈肌下粗食管旁静脉(→)高位折返汇入食管静脉曲张(←) 图6 CT检查结果冠状斜位显示细食管旁静脉(→)及重度食管静脉曲张(→) 图7 CT检查结果冠状斜位显示食管旁静脉(→)单独汇入奇静脉(←) 图8 膈肌上食管旁静脉曲张与食管静脉曲张汇合后共同汇入奇静脉的CT检查结果 8A:CT检查结果冠状斜位显示食管旁静脉曲张(→)与食管静脉曲张(←)在膈肌上同一高度局部加重且关系紧密,提示两者间有穿静脉相交通;8B:CT检查结果冠状斜位显示侧支血管穿出食管后汇入奇静脉(→),侧支血管迂曲扩张(←)

**Figure 1** Coronal oblique view in CT examination showed esophageal varices (→) **Figure 2** Coronal oblique view in CT examination showed paraesophageal varices (→) and severe esophageal varices (←) **Figure 3** Coronal oblique view in CT examination showed thick paraesophageal vein (←) and severe esophageal varices (→) **Figure 4** Coronal view in CT examination showed supra-diaphragmatic paraesophageal vein (→), esophageal varices (←) and the large caliber penetrating vein (↑) **Figure 5** Coronal view in CT examination showed the pseudo-paraesophageal vein and the subphrenic thick paraesophageal vein (→) converged with esophageal varices after turning back (←) **Figure 6** Coronal oblique view in CT examination showed thin paraesophageal vein (→) and severe esophageal varices (←) **Figure 7** Coronal oblique view in CT examination showed paraesophageal vein (→) converged along with azygos vein (←) **Figure 8** CT examination results of supra-diaphragmatic paraesophageal varices confluence with esophageal varices into azygos vein 8A: Coronal oblique view in CT examination showed that paraesophageal varices (→) and esophageal varices (←) were locally aggravated and closely related at the same height above the diaphragm, indicating presence of penetrating veins between them; 8B: Coronal oblique view in CT examination showed collateral vessels passing through the esophagus and flowing into azygos vein (→), and collateral vessels were tortuous dilatation (←)

细小的穿静脉,更无法确定血流方向。本研究中共仅6例可清晰显示在膈肌上食管旁静脉形成大口穿静脉汇入EV。已有研究结果显示:EUS检查可测定食管旁静脉曲张的容积并可预测普奈洛尔治疗EV的效果,容积减小则EV不易复发<sup>[28]</sup>。该

研究结果进一步说明食管旁静脉曲张与EV严重程度密切相关。

三、基于食管旁静脉解剖特点的手术方式选择  
关于断流术中食管旁静脉的保留或离断,笔者认为:对CT检查结果显示无食管旁静脉、细食管旁



**图 9** 单纯脾切除术患者手术前后 CT 检查结果 9A: 术前 CT 检查结果冠状斜位显示粗食管旁静脉(→)、自发性胃肾分流(←)、无食管静脉曲张;9B: 术后 CT 检查结果冠状斜位显示食管旁静脉变细(→)、自发性胃肾分流(←)、无食管静脉曲张 **图 10** 脾切除联合改良彻底断流术患者手术前后 CT 检查结果 10A: 术前 CT 检查结果冠状斜位显示膈肌上形成食管旁静脉曲张(→)和重度食管静脉曲张(←)及两者间大口径穿静脉(↓);10B: 术后 CT 检查结果冠状斜位显示食管旁静脉明显变细(→)和轻度食管静脉曲张(←),在贲门水平显示切割闭合钉(↑) **图 11** 行脾切除联合保留食管旁静脉断流术患者手术前后 CT 检查结果 11A: 术前 CT 检查结果冠状斜位显示膈肌上粗食管旁静脉(←)和重度食管静脉曲张(→)及两者间大口径穿静脉(↓);11B: 术后 CT 检查结果冠状斜位显示膈肌上食管旁静脉主干变细(←)和重度残留食管静脉曲张(→)及两者间大口径穿静脉(↓)

**Figure 9** Preoperative and postoperative CT examination of patients undergoing splenectomy 9A: Coronal oblique view in preoperative CT examination showed thick paraesophageal vein (→), spontaneous gastroduodenal shunt (←) without esophageal varices; 9B: Coronal oblique view in postoperative CT examination showed thinner paraesophageal vein (→), spontaneous gastroduodenal shunt (←) without esophageal varices

**Figure 10** Preoperative and postoperative CT examination of patients undergoing splenectomy combined with modified complete devascularization 10A: Coronal oblique view in preoperative CT examination showed supra-diaphragmatic paraesophageal varices (→), severe esophageal varices (←) and the large caliber penetrating vein (↓); 10B: Coronal oblique view in postoperative CT examination showed obvious thinner paraesophageal vein (→), mild esophageal varices (←) and the incised staples at the level of cardia

**Figure 11** Preoperative and postoperative CT examination of patients undergoing splenectomy combined with paraesophageal vein preserving devascularization 11A: Coronal oblique view in preoperative CT examination showed supra-diaphragmatic thick paraesophageal vein (←), severe esophageal varices (→) and the large caliber penetrating vein (↓); 11B: Coronal oblique view in postoperative CT examination showed supra-diaphragmatic thinner paraesophageal vein (←), severe residual esophageal varices (→) and the large caliber penetrating vein (↓)

静脉以及食管旁静脉汇入 EV 的患者,不需要选择紧贴食管分离(旨在离断穿静脉)保护食管旁静脉的手术方式。这类手术易导致食管并发症,术后吞咽困难及吞咽疼痛发生率达 8.2%~15.0%<sup>[29-30]</sup>。本研究结果显示:8 例发生吞咽疼痛患者,其手术方式均保留食管旁静脉。笔者团队选择改良彻底断流术阻断来自门静脉系统的逆向血流及来自胃左动脉和左膈下动脉的分支血流,该手术方式还可保护起源于胃左动脉的副左肝动脉。改良彻底断流术因不紧贴食管分离,可降低食管并发症发生率,缩短手术时间,还能够避免食管旁静脉作为 EV 残留或复发的供血因素<sup>[15-17,31]</sup>。在贲门水平离断食管旁静脉后远侧端的食管旁静脉可能通过穿静脉起到引流 EV 的作用。相反,本研究中 2 例行保留

食管旁静脉断流术患者因未离断汇入 EV 的食管旁静脉而导致 EV 复发。对于合并重度 EV 的食管旁静脉曲张患者,笔者团队虽未行改良彻底断流术,但笔者认为:这类食管旁静脉曲张是 EV 治疗后复发因素,只要不是门静脉主要流出道,手术中可以进行彻底离断。

本研究 8 例单纯脾切除术中,术后发生肝性脑病 1 例。导致该例患者出现肝性脑病的原因可能是术前存在食管旁静脉及自发性胃肾分流,单纯脾切除术后肠系膜静脉血通过分流通道进入体循环的比例升高。自发性门体分流对机体产生双重相反作用,降低门静脉压力同时造成肝功能损害。近年多项研究结果显示:自发性门体分流的分流量越大,患者肝功能损害越重、肝性脑病发生率越高<sup>[32-37]</sup>。



而食管旁静脉属于特殊的自发性门体分流,最大危害是通过穿静脉造成治疗后 EV 复发<sup>[19-22]</sup>。笔者认为:在断流手术中同时切除脾脏,能够使门静脉血流显著减少,离断食管旁静脉后其有限的分流量不足以抵销因脾切除所致门静脉压力下降的效果,术后门静脉压力仍低于术前。因此,患者的食管旁静脉如果不是门静脉主要流出道(如门静脉完全性血栓)或明确单独汇入体静脉系统可保留,其他情况应予离断。

综上,门静脉高压症患者食管旁静脉 CT 检查显示率>50%,血管粗细及走行方式不同;食管旁静脉的 CT 检查解剖特征可以为制订手术方式提供参考。

**利益冲突** 所有作者均声明不存在利益冲突

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