

## ·专题·儿童胰腺外科·

## 小儿腹腔镜保脾胰腺体尾部切除手术七例

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**【摘要】 目的** 探讨儿童胰腺体尾部病变行保留脾脏和脾血管的腹腔镜胰体尾切除手术的可行性与安全性。**方法** 以 2015 年 1 月至 2020 年 12 月湖南省儿童医院收治的 7 例胰腺体尾部实性假乳头状瘤患者为研究对象,7 例均采用保留脾脏与脾动脉或脾动脉、脾静脉的方法切除胰腺体尾部,保留胰腺头颈部,保留脾脏和脾动脉、动静脉;2 例保留脾脏和脾动脉。**结果** 7 例均成功完成保留脾脏和脾血管的胰体尾切除术,平均手术时间( $150 \pm 56$ )min;术中平均出血量为( $85 \pm 24$ )mL;术中无一例输血;术后平均住院时间( $12 \pm 3$ )d。手术后 1 例出现胰瘘,经保守治疗痊愈,其他患者均无合并症,随访无一例复发与转移。**结论** 保留脾脏和脾动脉的儿童胰腺体尾部切除手术安全可行,是否保留脾静脉取决于术中肿瘤与脾静脉的关系,儿童胰腺非恶性肿瘤部分切除术是最佳选择。

**【关键词】** 胰腺肿瘤/外科学;腹腔镜检查/方法;治疗结果;儿童

**【中图分类号】** R735.9 R730.56

**Experience of laparoscopic resection of spleen-preserving pancreatic body and tail in children.** Yin Qiang, Peng Yuming, Xie Weixin, Chen Lijian, Yuan Miaoxian. Department of General Surgery, Hunan Children's Hospital, Changsha, Hunan 410007. Corresponding author: Yin Qiang, Email: qiangyin@hotmail.com

**【Abstract】 Objective** To investigate the feasibility and safety of laparoscopic resection of the body and tail of the pancreas in children with preservation of the spleen and splenic blood vessels. **Methods** Seven patients with solid pseudopapillary tumors of the pancreatic body and tail who were admitted to Hunan Children's Hospital from January 2015 to December 2020 were selected as the research objects. Seven patients were treated with the method of preserving the spleen and splenic artery or splenic artery and vein. Resection of the tail of the pancreas. The head and neck of the pancreas were preserved, and the body and tail occupied by the tumor were removed. The spleen and splenic arteries and veins were preserved in some cases, and the spleen and splenic arteries were preserved in some cases. **Results** All 7 cases successfully completed the resection of the body and tail of the pancreas with the preservation of the spleen and splenic vessels. The average operation time was ( $150 \pm 56$ ) minutes; the average blood loss during the operation was ( $85 \pm 24$ ) ml; none of the operations required blood transfusion; Hospitalization time is ( $12 \pm 3$ ) days. Pancreatic fistula occurred in 1 case after the operation, which was cured by conservative treatment without other comorbidities. No recurrence or metastasis occurred in the follow-up. **Conclusion** The resection of the body and tail of the pancreas in children with the preservation of the spleen and splenic artery is safe and feasible. Whether the splenic vein is preserved depends on the relationship between the tumor and the splenic vein. Partial resection of non-malignant pancreatic tumors in children is the best choice.

**【Key words】** Pancreatic Neoplasms/SU; Laparoscopy/MT; Treatment Outcome; Child

脾动脉和脾静脉与胰腺组织紧贴,尤其是位于动脉下方的脾静脉,其主干接收纵行汇入的数支胰属支。胰腺尾部和脾脏毗邻关系密切,有时甚至

深入脾门血管之间,难以分离<sup>[1]</sup>。自 Mayo 施行首例胰体尾切除术并脾脏切除以来,这一术式延续了数十年。随着外科手术的发展,直至 1982 年 Robey 等报道在保留脾脏的前提下对胰腺实施体尾部切除术,学者们才开始重视脾脏的解剖学和免疫学研究<sup>[2]</sup>。对于位于胰腺体尾部的儿童胰腺恶性肿瘤,为达到手术的根治性目标,学者主张行胰腺远端及

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脾脏的联合切除。但对于胰腺体尾部的良性肿瘤以及交界性肿瘤,在完全切除胰腺肿瘤的同时保留患者脾脏的功能应是此类患者最佳、最合理的治疗方式<sup>[3]</sup>。本研究对7例胰腺体尾部实性假乳头状瘤患者的手术治疗过程进行总结分析。

## 材料与方法

### 一、研究对象

2015年1月至2020年12月,湖南省儿童医院普外科共完成了7例保留脾脏和脾血管的胰腺体尾部切除手术。其中男2例,女5例。年龄4~15岁,中位年龄6岁。7例均因偶然体检或腹部外伤导致疼痛,经进一步检查发现,肿瘤标记物CEA、CA199均在正常范围内。影像学检查提示7例患者肿瘤均位于胰腺体尾部,肠系膜上动脉的左侧,其中1例靠近肿瘤的脾静脉近端未见显示,1例脾静脉显示肿瘤有推挤现象。综合各项检查结果,临床诊断不考虑恶性肿瘤。5例选择保留脾脏和脾动、静脉的胰腺体尾部切除手术,2例选择保留脾脏和脾动脉的胰腺体尾部+脾静脉切除手术。

### 二、手术方式

患者平卧位,气管插管全身麻醉后,于脐部做纵形小切口,直视下进腹置入10 mm Trocar,建立气腹后进镜行全腹探查。直视下于右侧中腹部、上腹部、左侧中腹部分别穿刺置入2个5 mm及1个10 mm Trocar。用超声刀切开胃结肠韧带、脾肾韧带、脾胃韧带后暴露胰腺。在胰腺上缘根据动脉搏动位置游离脾动脉,血管吊带向上悬吊后在其下方寻找脾静脉,将远端脾静脉进行血管吊带悬吊后游离胰腺尾部,用无损伤钳将尾部向右侧翻转,分离脾动脉、脾静脉和胰腺体尾部之间的粘连和分支血管,在肠系膜上动脉左侧将胰腺体尾部切除,断端使用4-0或5-0 Prolene缝线连续缝合,保留脾动静脉和脾脏;其中1例脾静脉被肿瘤包绕,脾静脉近端未见显示,胃大弯至脾上极已形成粗大脾胃分流血管,脾下缘可见经脾门向肠系膜上静脉分流的血管,完整切除包含肿瘤在内的胰腺体尾部和脾静脉,术中脾脏血运好。另外1例肿瘤和脾静脉关系紧密,术中无法完整游离脾静脉,遂切除脾静脉,保留脾动脉和脾脏。2例术中均不离断脾胃韧带和脾肾韧带,对脾脏不进行常规游离。

## 结 果

### 一、病理学检查

7例均完整切除,最大肿瘤直径6.5 cm。肿瘤大体标本呈实性、囊性、囊实性,色泽呈灰白或灰红色,部分囊内可见出血及坏死物。术后病理结果均提示胰腺切缘干净,免疫组化结果提示Ki-67(1%+),CD10(+),CD56(++),Vim(+++),CEA(-),CD99(-),NSE(-),S100(-),CgA(-),E-CAD(-),CD117(-),PLAP(-)。

### 二、术后并发症和远期疗效

术后住院7~12 d。1例(14.28%)发生胰瘘,经胰腺断面引流管通畅引流结合抑酶等对症治疗后好转;6例术后第4天拔除胰腺断面引流管,1例术后第8天拔除引流管。7例均痊愈出院,均获得随访,患者一般情况良好,1例切除脾静脉者术后第7天B超监测显示脾肾分流血管形成,无糖尿病、腹泻、消化不良等胰腺功能减退情况发生,生长发育正常。

## 讨 论

对于儿童胰腺体尾部肿瘤,在行胰腺体尾部切除过程中联合脾脏切除,可在一定程度上缩小处理脾血管与肿瘤的难度,简化手术。然而联合脾脏的切除会增加脾脏周围韧带的游离、腹腔镜下脾脏切除的步骤、标本取出难度和手术时间<sup>[4]</sup>。对于儿童而言,保留脾脏可防止脾切除术后出现爆发性感染、败血症、血小板增高等;从肿瘤免疫学和儿童生长发育来看,保留脾脏有重要意义<sup>[5]</sup>。

对于儿童胰腺恶性肿瘤(如胰母细胞瘤),为达到手术的根治性切除,对位于胰腺体尾部的恶性肿瘤应实施联合脾脏、脾血管的胰腺体尾部切除术。但是,对于胰腺体尾部的良性肿瘤或交界性肿瘤(如实性假乳头状瘤),其生物学行为偏良性,肿瘤周围的浸润与转移少见,在能够分离出脾动脉的前提下可保留脾脏<sup>[6]</sup>。因脾静脉的位置在胰腺背侧缘靠下,当胰腺体尾部病变与脾静脉存在粘连时,难以从脾静脉上将其剥离。部分病例肿瘤包绕部分脾静脉,导致脾静脉无法完整游离。部分病例可在长时间内形成脾脏周围的静脉分流血管,经脾胃韧带向胃网膜静脉分流或经脾肾韧带之间形成脾-肠系膜静脉分流;部分病例切除脾静脉后可在脾-

左肾上腺之间形成分流血管,经左肾静脉回流至下腔静脉。对这部分病例实施保留脾脏的术式安全可行,在切除胰腺肿瘤的同时,还能达到保留脾脏功能的目的<sup>[7]</sup>。

保留脾脏的胰腺体尾部切除手术需要游离脾血管和处理胰腺断端,其并发症主要是胰瘘、脾梗死与脾脓肿,其中胰瘘是最常见的并发症。保留脾脏的胰体尾切除术在成人中术后胰瘘的发生率为 7.6%~40.0%,而在儿童中发生率低于此数值。儿童胰腺导管细小,切除创面小,在手术过程中采用双极电凝烧灼可有效凝闭胰腺断面的胰腺小导管, Prolene 缝线的使用可有效封闭断端和主胰管,降低术后胰漏的发生率<sup>[8]</sup>。其次儿童胰腺局部炎症反应小,通过禁食、补液以及给予生长抑素,可在短期内痊愈。术中确切结扎主胰管并妥善处理胰腺断端是预防术后胰瘘的关键。脾梗死和脾脓肿是少见但严重的并发症,多发生在对脾血管处理不佳的情况下,本组无此并发症发生。儿童的血管代偿能力强,在不破坏脾周韧带的情况下,容易在短期内形成脾周静脉分流血管,即使术前未形成脾周静脉分流血管,术后短时间内亦可有效的形成脾-肾上腺静脉分流和脾-胃网膜静脉分流,很难并发脾梗死和脾脓肿<sup>[1]</sup>。如果怀疑脾梗死,应尽早行多普勒超声检查以明确诊断。对于早期发现的局灶性脾梗死,早期使用抗生素治疗多数可以治愈。

在腹腔镜下实施保留脾脏的胰腺体尾切除手术是一项复杂的腔镜操作技术<sup>[9]</sup>。我们体会到手术成功的关键是 Trocar 的位置布局、主刀医生拥有丰富的腹腔镜操作经验、缝合技术和开腹胰腺手术经验。在充分暴露胰体尾后,首先在胰腺上缘游离暴露脾动脉,血管吊带的悬吊可及时控制术中不可预料的大出血,儿童胰腺断面小、质地脆,在超声刀切割下可快速有效离断,无需使用切割闭合器进行离断,断面使用双极电凝可有效止血。游离脾静脉时,动作宜轻柔,儿童脾血管壁薄、口径细小,汇入的小属支容易撕裂出血,在腔镜下修补破口可能会直接缝闭脾静脉主干。在取出标本时,可经脐部切口稍稍扩大内口,经改制的无菌手套作标本袋拖出,可避免标本在取出时和腹壁接触<sup>[10]</sup>。术后应严密观察患者腹痛、体温等变化,监测引流液性状和淀粉酶含量,可早期发现是否发生胰漏。

综上,保留脾脏的胰体尾切除术减少了处理脾脏的手术程序,联合脾静脉的切除可以降低手术难度,在不破坏脾周韧带的前提下,仅保留脾动脉能

够保住脾脏的功能。该手术一方面保留了脾脏的正常功能,另一方面缩小了手术范围,降低了手术难度,减少了机体的损伤。随着手术病例的积累和经验的总结,保留脾脏的胰体尾切除术将是儿童胰腺良性和交界性肿瘤的理想术式选择。

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