



# 腹腔镜辅助结肠肛管吻合术治疗高位直肠闭锁

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**【摘要】 目的** 探讨腹腔镜在小儿高位直肠闭锁中的应用价值。**方法** 选择高位直肠闭锁患儿 5 例,男 3 例,女 2 例,年龄 2~7 个月。患儿出生时 X 线检查均提示直肠闭锁,肛窝如漏斗状,新生儿期均行横结肠造瘘。二期在腹腔镜监视下游离直肠,远端予结扎;然后经肛门环形切开肛管盲端黏膜,电刺激确定肌肉中心点,在腹腔镜监视下建立盆底隧道,将直肠盲端拖出与肛管黏膜吻合。2~3 个月后进行结肠造瘘关闭术。**结果** 5 例均在腹腔镜辅助下顺利完成直肠肛管吻合术,手术时间 70~90 min,无术中、术后并发症。随访 6~12 个月,所有患儿肛门外观正常,排便功能均为优,无肛门失禁、污粪等。随访期间行直肠肛管测压检查,本组病例肛管静息状态平均肛门括约肌(EAS)及肛门内括约肌(IAS)压力分别为(25.7±8.4)mmHg、(16.8±6.5)mmHg。**结论** 腹腔镜辅助下结肠肛管吻合术,避免了骶尾部手术对括约肌的损伤,可以获得较好的肛门外观,达到良好的排便控制,可作为高位直肠闭锁的治疗选择。

**【关键词】** 腹腔镜; 肛管; 吻合术,外科; 直肠

**Laparoscopic-assisted anorectoplasty for the treatment of high rectal atresia.** WANG Xing-xin, MAO Yong-zhong, TANG Shao-tao, et al. Department of Pediatric Surgery, Union Hospital of Huazhong University of Science and Technology, Wuhan 430022, China.

**【Abstract】 Objective** To explore the feasibility of laparoscopic-assisted anorectal pull through for the treatment of high rectal atresia. **Methods** Five pathiets with high rectal atresia were selected (3 males and 2 females, aging from two months to seven months). All patients were diagnosed with rectal atresia through the X-ray of abdomen, and the transverse colostomy was performed in the neonatal period. At second-stage operation, the rectum pouch was laparoscopically mobilized down to the lowest point, which was ligated and divided. Externally, the blind end of anal mucosa was circumferentially cut off, the centre of the muscle complex was identified using an electrical stimulator and a tunnel to the pelvis was created bluntly and dilated with Hegar probes under laparoscopic control. The rectum pouch was then pulled down and anastomosed with anal mucosa. Closure of the transverse colostomy was done two or three months later. **Results** All patients were successfully operated. The operation time ranged from 70min to 90min. No intra or post-operative complication was seen. On follow up which ranged from 6 to 12 months, external anus were normal and anal function was excellent. Anorectal manometry showed that EAS and IAS were 25.7±8.4 mmHg and 16.8±6.5 mmHg, respectively. **Conclusions** The laparoscopic approach has advantages of minimal invasion to the pelvic floor musculature and achieving good anal functions. This technique may be an alternative option to the treatment of rectal atresia.

**【Key words】** Laparoscopes; Anal Canal; Anastomosis, Surgical; Rectum

直肠闭锁是先天性肛门直肠畸形的一种特殊类型,占先天性直肠肛门畸形的 1% 左右;直肠闭锁位置通常较高,传统治疗方法是行乙状结肠造瘘,二期行尾后路结肠肛管吻合术<sup>[1,2]</sup>。我们自 2006 年至

2013 年收治直肠闭锁患儿 5 例,均实施腹腔镜辅助下结肠肛管吻合术,疗效满意,现报道如下。

## 材料与方

### 一、临床资料

5 例直肠闭锁患儿中,男性 3 例,女性 2 例,年龄 2~7 个月,合并先天性房间隔缺损及尿道下裂各 1 例。患儿均以腹胀入院,检查发现肛窝如漏斗状,

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肛管黏膜长约 0.5 ~ 1 cm, 近端为盲端, X 线检查诊断为高位直肠闭锁, 一期均行横结肠造瘘, 结肠远端造影未见明显瘘管(图 1, 图 2)。2 ~ 3 个月后二期行腹腔镜辅助下结肠肛管吻合术, 三期行结肠造瘘闭合术。

## 二、治疗方法

5 例患儿入院时先行横结肠造瘘, 术后予正常喂养, 每日予肛管扩张。二期手术时患儿均采用气管插管全身麻醉, 置头低足高仰卧位。做脐部切口 0.5 cm, 直视下放置 5 mm Trocar, 建立 CO<sub>2</sub> 气腹, 气腹压力 8 ~ 10 mmHg, 置入腹腔镜, 分别于脐水平稍下方、腹两侧放置 2 个 5 mm Trocar。于腹腔镜下游离直肠和乙状结肠系膜的腹膜反折处, 暴露直肠上和

乙状结肠动静脉, 予离断, 尽可能保留结肠完整的三级血管弓。提起直肠紧贴直肠壁向远端游离至直肠逐渐变细, 予以结扎。分离盆底脂肪组织, 暴露盆底肌肉。手术操作转至会阴部, 于肛管盲端环形切开肛管黏膜, 顶端黏膜予切除, 在电刺激仪引导下, 刺激会阴肌肉, 于腹腔镜下辨认肌肉收缩的中心。自会阴肌肉的中心用 5 mm Trocar 向盆底穿刺, 在腹腔镜监视下指导穿刺针从盆底肌中心穿出, 之后依次用 7 ~ 11 号扩肛器逐渐扩张, 建立盆底隧道, 最后用 10 mm Trocar 导入隧道, 拔出 Trocar 的同时, 将直肠盲端一同拖出, 腹腔镜下监视肠管无扭转后, 与肛管黏膜端吻合(图 3 ~ 6)。留置肛管支撑, 术后 2 周开始扩肛, 1 ~ 2 个月下行结肠造瘘关闭术。

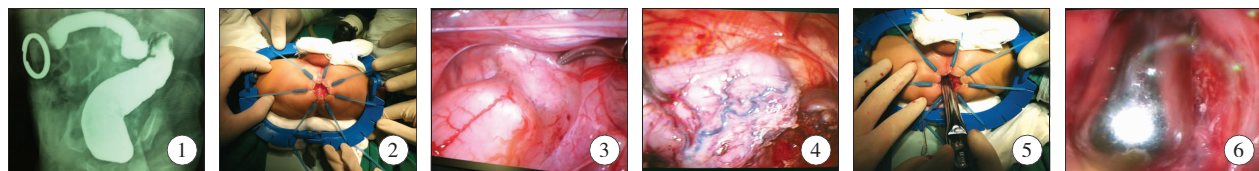


图 1 术前结肠造影; 图 2 肛管外观; 图 3 腔镜下见直肠盲端; 图 4 腔镜下直肠盲端已游离; 图 5 经肛管盲端建立隧道入腹腔; 图 6 腔镜下所见盆底肌肉隧道

**Fig. 1** Preoperative colonic barium imaging; **Fig. 2** Anal Appearance; **Fig. 3** Distal rectum showed by laparoscope; **Fig. 4** Separated distal rectum; **Fig. 5** the tunnel to the pelvis created bluntly by Hegar probe; **Fig. 6** the centre of the muscle complex showed by laparoscope

## 结 果

5 例均在腹腔镜下顺利完成手术。手术时间 70 ~ 90 min, 无术中、术后并发症发生。随访 6 ~ 12 个月, 所有患儿肛门外观正常, 根据文献评分标准<sup>[3]</sup>, 5 例患儿排便功能均为优, 排便正常, 无肛门失禁、污粪等表现。随访期间行直肠肛管测压检查, 本组病例肛管静息状态肛门外括约肌(EAS)及肛门内括约肌(IAS)压力分别为(25.7 ± 8.4) mmHg、(16.8 ± 6.5) mmHg, 均达正常水平。

## 讨 论

先天性直肠肛门畸形是小儿常见消化道畸形, 而直肠闭锁占有所有直肠肛门畸形的 1% 左右<sup>[1]</sup>。直肠闭锁通常位置较高, 传统治疗方法包括乙状结肠造瘘, 经骶尾部直肠肛管吻合术或经肛门直肠肛管吻合术等<sup>[2]</sup>。由于直肠闭锁近端通常位置较高, 单纯经肛门手术难以将近端结肠拖下吻合, 经尾后路手术是主要选择。对中高位直肠闭锁畸形, 尽管经尾后路手术可以充分暴露直肠盲端, 显示瘘管的部位及予以结扎, 但仍然有对盆底肌肉的损伤, 增加局

部瘢痕和感染风险<sup>[4]</sup>。

腹腔镜辅助下肛门成形术由 Georgeson 于 2000 年首次报道<sup>[5]</sup>。之后腹腔镜技术在高位肛门闭锁手术中得以广泛应用, 日趋成熟。目前多数学者认为腹腔镜在高位直肠肛门畸形中的优势主要表现在以下几个方面<sup>[6,7]</sup>: ①借助腹腔镜的放大作用, 可以较清晰地辨认两侧耻骨直肠肌肌腹的中心, 可以保证直肠经肌肉的中心点穿过。②避免了尾后路手术对肛周肌肉的损伤, 减少了瘢痕的形成, 有利于提高术后肛门的控便能力。③减少了感染的可能性。④对直肠泌尿系统的瘘管处理方便, 越是高位瘘管(如直肠膀胱瘘等), 腹腔镜处理越有优势。腹腔镜在直肠闭锁治疗中同样具备这些优势。直肠闭锁患儿肛管如漏斗状, 有完整的黏膜, 肛窝位置正常, 利用腹腔镜监视将直肠盲端经盆底肌肉的中心点拖下与肛管吻合, 避免了尾后路手术对肌肉的损伤, 充分保留了肛管黏膜, 对术后排便的控制和污粪的发生具有积极作用。本组所有患儿术后肛门外观正常, 直肠肛管测压静息状态 EAS 及 IAS 压力达正常患儿水平, 无污粪表现, 排便控制正常。直肠闭锁由于位置较高, 腹腔镜对直肠盲端及瘘管的处理也较为方便, 文献报道直肠闭锁患儿直肠与尿道或阴道之间通常没有瘘管<sup>[1]</sup>。本组病例结肠造影未见明显

痿管,尽管如此,我们对直肠远端仍然予以结扎处理,无尿痿和骶前感染的发生。

近年来,有作者报道对高位肛门直肠闭锁一期行腹骶会阴肛门成形术与 pena 手术及三期手术相比较,在排便控制方面没有显著性的差异,避免了多次手术创伤,且减轻了家长的经济负担<sup>[8,9]</sup>。文献报道对高位直肠闭锁的患儿多采用分期手术<sup>[1,3]</sup>。新生儿期先行乙状结肠造痿,优点在于通过结肠造痿口探入扩肛器行闭锁近端结肠扩张,使其逐渐伸长,便于结肠肛管的吻合。近年来有学者利用结肠镜经乙状结肠造痿口探入,在光源的监视下向下推送结肠盲端使与肛管靠近,然后经肛门于光源最透光处切开吻合,但限于两盲端较近的病例<sup>[1]</sup>。本组采用横结肠造痿,一方面可以减少下腹部的粘连,便于二期腔镜手术操作,另一方面保留了近端结肠的长度,使无张力拖下与肛管吻合。二期手术前,嘱家属每天扩肛,尽可能扩大肛管,使黏膜松弛,便于二期手术吻合。对于高位直肠闭锁、肛管发育良好的病例,腹腔镜辅助下结肠肛管吻合术可作为手术方式的选择之一。

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