

• 膀胱癌/尿流改道专栏 •

邢氏吻合法在机器人辅助腹腔镜下体腔内
回肠通道术中的应用*王明帅¹ 杨飞亚¹ 陈东¹ 韩苏军¹ 贾博林¹ 张勇¹ 邢念增¹

[摘要] **目的:**探讨邢氏吻合法在机器人辅助腹腔镜下体腔内回肠通道术中的临床疗效。**方法:**回顾分析 2021 年 2 月—2022 年 2 月在中国医学科学院肿瘤医院行机器人辅助腹腔镜下根治性膀胱切除+体腔内回肠通道术患者的临床资料及随访数据,统计分析邢氏吻合法的临床疗效。输尿管回肠吻合方法为邢氏吻合法,即输尿管回肠端端非抗反流吻合法。**结果:**纳入患者 11 例,其中男 10 例,女 1 例;平均年龄(63.0±6.3)岁,平均 BMI (24±3) kg/m²。11 例手术均顺利完成,无中转开放病例,无术中并发症。平均机器人操作时间(245±43) min,邢氏吻合法平均时间(26±5) min。3 例(27.3%)患者发生术后并发症 4 项,其中轻度并发症 3 项,重度并发症 1 项,并发症均与邢氏吻合法无直接关系。病理均为尿路上皮癌,淋巴结数平均(15.8±11.0)个。中位随访时间为 7 个月,轻度肾积水患者 1 例,此患者术前有肾积水,术后 3 个月随访轻度肾积水;术前另外 2 例肾积水患者术后随访均无肾积水表现;其余患者无输尿管扩张和肾积水,无输尿管狭窄。**结论:**邢氏吻合法在机器人辅助腹腔镜下体腔内回肠通道术中的临床疗效较好,操作简单,可重复性强,术后狭窄率低,但仍需大样本临床对照研究证实。

[关键词] 膀胱癌;回肠通道术;机器人;吻合

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Application of Xing's anastomosis technique in robot-assisted laparoscopic intracorporeal ileal conduit

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Abstract Objective: To explore the clinical effect of Xing's anastomosis in robot-assisted laparoscopic intracorporeal ileal conduit. **Methods:** The clinical and follow-up data of patients who underwent robot-assisted laparoscopic radical cystectomy and intracorporeal ileal conduit in Cancer Hospital of Chinese Academy of Medical Sciences from February 2021 to February 2022 were retrospectively analyzed, and the clinical efficacy of Xing's anastomosis was statistically analyzed. The ureter ileum anastomosis method is Xing's anastomosis, that is, the ureter ileum end-to-end non-anti-reflux anastomosis. **Results:** There were 11 patients enrolled, including 10 males and 1 female. The average age was (63.0±6.3) years old, and the average BMI was (24±3)kg/m². All 11 operations were successfully completed without open conversion and intraoperative complications. The average robot operation time was (245±43) minutes, and the average time of Xing's anastomosis was (26±5) minutes. Four postoperative complications occurred in 3 patients (27.3%) including 3 mild complications and 1 severe complication. The complications were not directly related to Xing's anastomosis. All pathology was urothelial carcinoma, and the average number of lymph nodes was (15.8±11.0). The median follow-up time was 7 months. One patient who had hydronephrosis before surgery still had mild hydronephrosis 3 months after operation. The other 2 patients with hydronephrosis before operation had no hydronephrosis during follow-up. The remaining patients had no ureteral dilation, hydronephrosis or ureteral stenosis. **Conclusion:** Xing's anastomosis has a good clinical effect on ro-

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bot-assisted laparoscopic intracorporeal ileal conduit, possessing simple procedure, good reproducibility and low stenosis rate, but it still required a large sample of clinical control study to confirm.

Key words bladder cancer; ileal conduit; robot; anastomosis

根治性膀胱切除是治疗肌层浸润性膀胱癌的标准术式。根治性膀胱切除后需要常规行尿流改道术。目前主要的尿流改道方式有回肠通道术、原位新膀胱术和输尿管皮肤造口术,其中回肠通道术是目前应用最多的术式^[1-2]。回肠通道术中输尿管回肠吻合口狭窄是非常棘手的并发症,严重影响患者的肾功能。目前常用的输尿管回肠吻合方法有Bricker法和Wallace法,开放手术的总体狭窄率在3%~10%,而机器人辅助手术的吻合口狭窄率较高,在12%左右^[3-4]。我们在2012年首次介绍了输尿管回肠端端吻合法,即邢氏吻合法,吻合方法简单,狭窄率低,非常适合在腹腔内尿流改道中应用^[5]。本研究详细介绍邢氏吻合法在机器人辅助腹腔镜下回肠通道术中的应用,根据机器人的特点优化了邢氏吻合法的步骤,探讨邢氏吻合法在机器人辅助腹腔镜下腹腔内回肠通道术中的临床疗效,现报告如下。

1 资料与方法

1.1 临床资料

选取2021年2月—2022年2月在中国医学科学院肿瘤医院行机器人辅助腹腔镜下根治性膀胱切除+腹腔内回肠通道术患者共11例,手术均由同一术者完成。术前均行胸部CT、头颅CT、全身骨扫描、腹部磁共振评估临床分期。行心电图、心脏彩超和肺功能评估心肺功能。实验室检查评估凝血功能和肾功能。

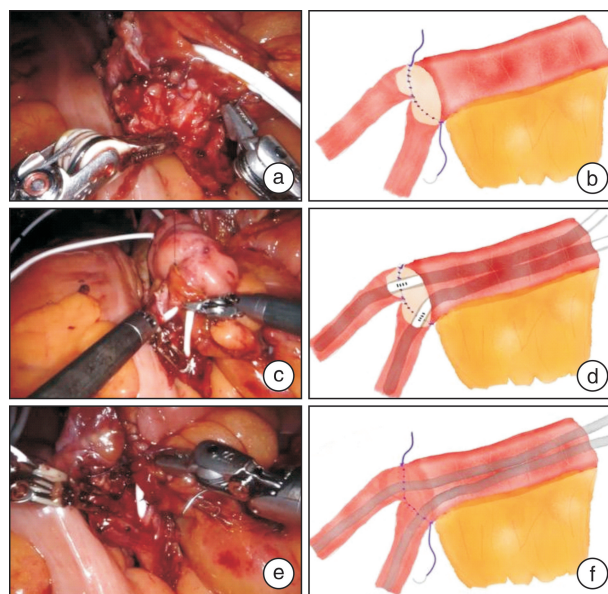
11例患者中,男10例,女1例。平均年龄(63.0±6.3)岁,平均BMI(24±3) kg/m²,中位麻醉风险评分(ASA)为2分,中位体力状态评分(ECOG)为1分。临床T分期T₁ 3例、T₂ 5例、T₄ 3例,其中8例患者接受了新辅助治疗[新辅助化疗和(或)新辅助化疗+免疫治疗],中位新辅助治疗周期为3个周期。3例患者术前存在一侧输尿管扩张,其中2例合并肾积水,术前平均血肌酐为(75.1±18.6) μmol/L。

1.2 方法

机器人辅助根治性膀胱切除术后,实施腹腔内回肠通道术。距回盲部约20 cm,使用EndoGIA(60 mm)截取长15~20 cm回肠襻,回肠襻内注入50 mL庆大霉素盐水。用EndoGIA(60 mm)侧侧吻合恢复回肠连续性,用3-0可吸收线关闭肠系膜裂孔。

邢氏吻合法的步骤见图1。邢氏吻合法为输尿管回肠端端非抗反流吻合法,具体方法是将两侧输尿管楔形切开1.5~2.0 cm,用一根长15 cm的

4-0可吸收线连续缝合左侧输尿管后壁和回肠襻后壁右半侧,继续用这根线连续缝合右侧输尿管后壁和回肠襻后壁左半侧(图1a、b)。用超滑导丝植入两侧输尿管单J管后(图1c、d),用另一根长15 cm的4-0可吸收线连续缝合输尿管前壁和回肠襻前壁(图1e、f)。缝合左侧输尿管前壁和回肠襻前壁后,需要将回肠襻前后壁缝合1针再继续缝合右侧输尿管前壁和回肠襻前壁,这样才能保证两输尿管之间吻合确切(扫描二维码观看手术视频)。



a、b:连续吻合输尿管后壁和回肠后壁;c、d:置入两侧输尿管支架管;e、f:连续吻合输尿管前壁和回肠前壁。

图1 邢氏吻合法示意图

1.3 观察指标

记录机器人辅助腹腔镜下根治性膀胱切除+腹腔内回肠通道术总手术时间、邢氏吻合法手术时间、术后并发症及术后病理结果。随访主要观察非肿瘤因素导致的术后肾积水和输尿管扩张,计算输尿管回肠吻合口狭窄比例。

总手术时间包括开切口到关闭切口时间和机器人操作时间。邢氏吻合法时间是指单纯的输尿管与回肠端端吻合时间。术后并发症采用Clavien-Dindo分级,分为轻度并发症(I~II级)和重度并发症(III~IV级)。统计术后30 d内的并发症。

1.4 统计学方法

应用R4.2.1软件进行数据分析。符合正态分布的计量资料以 $\bar{X} \pm S$ 表示,两样本比较采用独

立样本 t 检验;非正态分布的计量资料以 $M(P_{25}, P_{75})$ 表示;计数资料以率表示。以 $P < 0.05$ 为差异有统计学意义。

2 结果

11 例机器人辅助腹腔镜下根治性膀胱切除+体腔内回肠通道术均顺利完成,无中转开放病例。总平均手术时间(372±69) min,平均机器人操作时间(245±43) min,邢氏吻合法(单纯输尿管与回肠吻合)平均时间(26±5) min。无患者围手术期输血。术后 3 例(27.3%)患者发生 4 项并发症,包括腹壁下动脉出血 1 项、淋巴漏 1 项、伤口感染 1 项、尿路感染 1 项。轻度并发症 3 项,药物保守治疗;重度并发症 1 项,腹壁下动脉出血回手术室缝合处理。并发症均与邢氏吻合法无直接关系。

术后病理有 3 例新辅助治疗后完全缓解(CR),CR 率为 37.5%,有 2 例新辅助治疗后部分缓解(PR),PR 率为 25.0%,1 例 T_2 降级至 T_{is} ,1 例 T_4 降级至 T_1 ,新辅助后总缓解率为 62.5%。病理均为尿路上皮癌,淋巴结数平均(15.8±11)个。

中位随访时间为 7 个月。轻度肾积水患者 1 例,此患者术前有肾积水,术后 3 个月随访轻度肾积水;另外 2 例术前肾积水患者术后随访均无肾积水表现。其余患者无输尿管扩张和肾积水。无输尿管狭窄患者。术后 2 个月复查肌酐,平均血肌酐为(78.0±15.3) $\mu\text{mol/L}$,与术前比较差异无统计学意义($P=0.27$)。

3 讨论

本研究回顾分析了单中心小样本机器人辅助腹腔镜下根治性膀胱切除+体腔内回肠通道术的临床资料和随访数据,发现邢氏吻合法即输尿管回肠端端非抗反流吻合法操作简单,可重复性强,术后输尿管吻合口狭窄率低,是一种简单有效的吻合方法。

回肠通道术是应用最广泛的尿流改道方式,其主要并发症包括输尿管回肠吻合口狭窄、肠痿、肠梗阻、尿路感染等。术后输尿管回肠吻合口狭窄是较为棘手的问题。目前应用最多的非抗反流的输尿管回肠吻合方法为 Bricker 法和 Wallace 法。Bricker 法是端侧吻合法,Wallace 法是两输尿管侧侧吻合后与回肠端端吻合,总体尿流改道术后良性输尿管回肠吻合口狭窄率在 3%~10%^[6]。近期有两项回顾性研究比较两种输尿管回肠吻合法狭窄率,其中一项研究发现 Bricker 法和 Wallace 法狭窄率分别为 15.5% 和 11.27%,无明显差异;Bricker 法狭窄多发生在左侧(75%),Wallace 法多发生两侧同时狭窄(69/2%)^[7]。另一项研究发现 Bricker 法狭窄率明显高于 Wallace 法(25.3% vs. 7.7%)^[8]。本中心前期开放和腹腔镜下邢氏吻合法已应用比较成熟,报道开放和腹腔镜下邢氏吻

法总体输尿管回肠吻合口狭窄率约 4%,要低于 Bricker 法和 Wallace 法^[5]。

目前机器人辅助腹腔镜根治性膀胱切除及体腔内尿流改道应用逐渐增多,研究发现,机器人输尿管回肠吻合口狭窄率要高于开放手术(11.3% vs. 9.3%, 12.1% vs. 7%)^[9-10]。然而也有一项研究并不支持该结论,可能与样本量较小有关^[11]。机器人辅助体腔内尿流改道术后输尿管回肠吻合口狭窄率更高,能达到 13%,甚至有的报道达到了 25%^[9,12]。考虑与术者的经验密切相关,因为开展体腔内尿流改道第 1 年的狭窄率高达 47%,之后逐年下降^[12]。另一项研究发现 75 例机器人体腔内尿流改道后狭窄率从 17.5% 降至 4.9%^[9]。

本研究中,11 例患者接受了机器人辅助体腔内回肠通道术,无输尿管狭窄患者。我们认为,实施机器人辅助体腔内尿流改道时采取以下几点措施可以避免吻合口狭窄:①充分保留输尿管血运,不要钳夹输尿管采用轻挑的方式分离输尿管,分离输尿管时避免紧贴输尿管;②左侧输尿管经乙状结肠系膜后拉至右侧时,要充分游离乙状结肠系膜间隙,不要张力过大压迫左侧输尿管,同时注意左侧输尿管不能有张力,不能扭转,也不能成角;③输尿管回肠吻合时,间断或连续缝合均可,缝合不用过于严密,吻合分为前壁和后壁分开吻合,不要 1 根线连续吻合 1 圈;④在体腔内构建时,可以清晰看到输尿管的长度,在吻合前可以将两侧输尿管裁剪至合适长度,够长无张力即可;⑤吻合完后,需要将吻合口关闭至后腹腔,避免内疝的发生。

综上所述,本单中心小样本研究发现,机器人辅助腹腔镜下体腔内回肠通道术中应用邢氏吻合法狭窄率低,操作简单,值得进一步应用。

利益冲突 所有作者均声明不存在利益冲突

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