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不同剂量及注药方向罗哌卡因对肛肠手术麻醉效果的影响

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摘要 目的：研究不同剂量及注药方向罗哌卡因对肛肠手术麻醉效果的影响及安全性。**方法：**选择 2015 年 1 月～2016 年 12 月在我院进行肛肠手术治疗的患者 148 例，按照麻醉方法的不同分为四组，每组各 37 例，即罗哌卡因 8 mg 向头注药组、罗哌卡因 8 mg 向尾注药组、罗哌卡因 10 mg 向头注药组以及罗哌卡因 10 mg 向尾注药组。比较四组患者的感觉阻滞恢复时间、感觉阻滞起效时间以及运动阻滞恢复时间及恶心呕吐、尿潴留、腰部不适、头痛等术后不良反应的发生情况。**结果：**罗哌卡因 10 mg 向头注药与向尾注药的感觉阻滞起效时间比较差异均无统计学意义(P>0.05)，10 mg 向头注药组的运动阻滞恢复时间明显短于 10 mg 向尾注药组(P<0.05)，以 10 mg 向头注药组感觉阻滞恢复时间最短(P<0.05)，8 mg 向尾注药比 10 mg 向尾注药阻滞起效明显减慢(P<0.05)，运动以及感觉阻滞恢复时间均明显缩短 (P<0.05)，10 mg 向头注药组的感觉阻滞起效时间明显短于 8 mg 向头注药组(P<0.05)，运动以及感觉阻滞恢复时间均明显延长(P<0.05)。四组均未发生恶心呕吐以及头痛等术后不良反应，罗哌卡因 8 mg 向尾注药组的尿潴留以及腰部不适的发生率均明显低于其他三组(P<0.05)。**结论：**向尾端迅速注射罗帕卡因 8 mg 进行蛛网膜下隙阻滞对肛肠手术患者的麻醉效果最好，且安全性最高。

关键词：罗哌卡因；不同剂量；不同注药方向；肛肠手术；麻醉效果

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Effect of Different Doses and Directions of Ropivacaine Injection on the Anorectal Surgery

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ABSTRACT Objective: To investigate the influence and safety of different doses and direction of ropivacaine injection on the anesthetic effect of anorectal surgery. **Methods:** 148 cases of patients with anorectal surgery who were treated in our hospital from January 2015 to December 2016 were selected and divided into four groups, 8 mg ropivacaine injection group, 8mgropivacaine on endnote medicine group, 10 mg ropivacaine injection group and 10 ropivacaine on endnote medicine group. The recovery time, the onset time of sensory block and motor block recovery time were compared between four groups; the adverse reaction of nausea and vomiting, urinary retention, waist discomfort, headache and other postoperative situations were compared. **Results:** There was no significant difference between the 10 mg ropivacaine injection and head to end note drug in the onset time of sensory block, motor block(P>0.05), the recovery time of 10 mg injection group and was significantly shorter than that of the 10 mg to endnote medicine group (P<0.05), the recovery of sensory block of 10 mg head injection group has the shortest time (P<0.05), the drug block onset on 8 mg tail injection group was decreased than that of the 10 mg tail injection group (P<0.05), the onset time of sensory block 10 mg head injection group was significantly shorter than that of the 8 mg head injection group (P<0.05), the motion and sensory block recovery time were significantly prolonged (P<0.05). There was no postoperative nausea and vomiting and headache adverse reactions between the four groups, the incidenceof urinary retentionand waist discomfort of ropivacaine 8 mg head injection group was significantly lower than that of the other three groups (P<0.05). **Conclusion:** Ropivacaine8 mg tail injection has significant clinical effect and less adverse reactions on patients with anorectal surgery, it could help to accelerate the recovery of patients.

Key words: Ropivacaine; Different doses; Different directions of injection; Anorectal surgery; Anesthesia effect

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前言

蛛网膜下隙阻滞麻醉因具有麻醉药物使用剂量低、起效迅速、患者术后头痛少、感觉舒适且呼吸系统和循环系统的并发症较少等多种优点已广泛应用于临床[1-5]。罗哌卡因是一种新型的酰胺类局部麻醉药物，临床试验以及动物试验验均证实罗哌卡因具有极地的心血管毒性以及中枢神经毒性[6-9]，但临床上尚未见关于罗哌卡因不同剂量以及注药方向对肛肠手术麻醉效果的影响和安全性的研究报道。本研究选择我院进行肛肠手术

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治疗的患者 148 例,分为罗哌卡因 8 mg 向头注药组、罗哌卡因 8 mg 向尾注药组、罗哌卡因 10 mg 向头注药组以及罗哌卡因 10 mg 向尾注药组,对比四组患者的不良反应发生情况及麻醉效果,现将结果报道如下。

1 资料与方法

1.1 一般资料

选择 2015 年 1 月～2016 年 12 月我院收治 1 行肛肠手术治疗患者 48 例，按照麻醉方法的不同分为四组。罗哌卡因 8 mg 向头注药组 37 例,男 23 例,女 14 例;年龄 19～78 岁,平均(54.12± 6.98)岁;体质量 42~86 kg,平均(62.79± 11.43) kg。罗哌卡因 8 mg 向尾注药组 37 例,男 24 例,女 13 例;年龄 18～79 岁,平均(54.23± 6.65) 岁;体质量 41~86 kg,平均(62.83± 11.29) kg。罗哌卡因 10 mg 向头注药组 37 例,男 22 例,女 15 例;年龄18~78 岁，平均 (54.46± 6.75) 岁；体质量 43~86 kg，平均(62.23± 11.19) kg。罗哌卡因 10 mg 向尾注药组 37 例，男 21 例,女 16 例;年龄 19～78 岁,平均(54.63± 6.84) 岁;体质量 42~86 kg,平均(62.37± 11.62) kg。本研究经我院医学伦理委员会批准,患者知情同意。四组的基线资料比较差异均无统计学意义(P>0.05),具有可比性。

1.2 麻醉方法

所有患者均采取肛肠手术治疗,种类主要包括有肛瘘切除术、混合痔肛周痔切除术、肛裂切除术、混合痔黏膜上环切术以及肛周脓肿切开排脓等。患者均取侧卧位,在 S4~5 间隙进行蛛网膜下隙阻滞麻醉，抽取 0.5%罗哌卡因 (批号：国药准字 H20113446,生产厂家:扬子江药业集团南京海陵药业有限公司,规格:10 mL: 23.8 mg)8 mg 或 10 mg,回抽脑脊液并稀释为 2.5 mL,向尾端或者头端注入,注射时间为 20 s,当针刺患者的肛门无疼痛感后进行手术。

1.3 观察指标

比较四组患者的感觉阻滞恢复时间、感觉阻滞起效时间以及运动阻滞恢复时间;并比较四组患者的恶心呕吐、尿潴留、腰部不适、头痛等不良反应的发生情况。

1.4 统计学分析

采用 SPSS15.00 软件,多组间计量资料比较采用单因素方差分析,两组间比较采用 t 检验,计数资料比较采用 x^2 检验,以 P<0.05 为差异有统计学意义。

2 结果

2.1 四组运动和感觉阻滞时间的比较

罗哌卡因 10 mg 向头注药与向尾注药的感觉阻滞起效时间比较差异无统计学意义 (P>0.05),10 mg 向头注药组的运动阻滞恢复时间明显短于 10 mg 向尾注药组 (P<0.05),10 mg 向头注药组感觉阻滞恢复时间最短(P<0.05),8 mg 向尾注药比 10 mg 向尾注药阻滞起效明显减慢(P<0.05),运动以及感觉阻滞恢复时间均明显缩短 (P<0.05),10 mg 向头注药组的感觉阻滞起效时间明显短于 8 mg 向头注药组(P<0.05),运动以及感觉阻滞恢复时间均明显延长(P<0.05),见表 1。

表 1 四组运动和感觉阻滞时间对比($\bar{x}$± s)

Table 1 Comparison of the movement and sensory block time between four groups ($\bar{x}$± s)

	n	Onset time of sensory block (s)	Sensory block recovery time (h)	Motor block recovery time (h)
10 mg head injection group	37	29.35± 3.42	3.72± 0.25#	2.68± 0.35#
10 mg tailinjection group	37	28.37± 3.15#	3.89± 0.27*#	2.97± 0.24*#
8 mg head injection group	37	40.37± 4.56*	2.76± 0.24*	1.15± 0.32*#
8 mg tail injection group	37	38.12± 4.38*	2.99± 0.26*	0.89± 0.27*

Note: Compared with the 10 mg head injection group,*P<0.05; compared with8 mg tail injection group, #P<0.05.

2.2 四组术后不良反应发生情况的对比

四组均未发生恶心呕吐以及头痛等术后不良反应,罗哌卡因 8 mg 向尾注药组的尿潴留以及腰部不适的发生率均明显低于其他三组(P<0.05),见表 2。

表 2 四组的术后不良反应发生情况的对比[例(%)]

Table 2 Comparison of the incidence of postoperative adverse reaction between four groups[n(%)]

n		Nausea and vomiting	Urinary retention	Headache	Lumbar discomfort
10 mg head injection group	37	0(0.00)	6(16.22)#	0(0.00)	7(18.92) #
10 mg tailinjection group	37	0(0.00)	8(21.62)#	0(0.00)	5(13.51) #
8 mg head injection group	37	0(0.00)	3(8.11)*	0(0.00)	1(2.70) *
8 mg tail injection group	37	0(0.00)	2(5.40)*	0(0.00)	0(0.00) *

Note: Compared with the 10 mg head injection group,*P<0.05; compared with 8 mg tail injection group, #P<0.05.

3 讨论

随着人民膳食结构的逐渐改变、生活水平日益改善以及生活压力的不断加大，肛门直肠疾病的发病率呈逐渐升高的趋势,主要包括肛裂、痔、便秘、肛瘘、肛周脓肿、直肠息肉等[10-15],探寻一种合适的麻醉方法用于肛肠手术就显得极为重要。临床

上肛肠手术使用的麻醉方法主要包括低位硬膜外腔阻滞、局部浸润阻滞以及蛛网膜下隙阻滞等[16-20]。肛肠手术的麻醉特点包括：肛肠手术所需的麻醉平面较为狭窄，局部麻醉仅需要较低的麻醉药物剂量；由于齿状线以上的肛管直肠对痛觉并不敏感，因此无需进行麻醉就能开展各种检查以及治疗，如各种内窥镜检查、内痔注射治疗以及电灼治疗等[21-25]。肛肠手术中采用蛛网膜下隙阻滞麻醉，具有起效迅速、用药量少、肌松作用以及阻滞作用确切等优点。

罗哌卡因主要通过有效抑制神经细胞的 Na^+通道阻断神经兴奋以及传导。由于罗哌卡因对运动神经的阻滞功能与药物浓度相关，低浓度即可具有较为显著的感觉运动神经阻滞分离作用[26-31]。罗哌卡因在国外已广泛用于局部浸润麻醉、神经阻滞、硬膜外阻滞、术后镇痛和分娩镇痛。本研究结果表明向尾端迅速注射罗帕卡因 8 mg 进行蛛网膜下隙阻滞对肛肠手术患者具有显著的临床麻醉效果，分析其原因为向头端快速注射 10 mg 或 8 mg 罗哌卡因，药物会向头端进行扩散，造成阻滞平面相对较高，且范围较广，麻醉后血压会大幅度迅速降低，而向尾端快速注射 10 mg 或 8 mg 罗哌卡因，药物会向尾端进行扩散，使得阻滞平面较低，阻滞浓度较高，从而获得满意的肛门肌松效果以及麻醉效果，但 10 mg 向尾注药组的罗哌卡因给药剂量相对较大，造成骶神经阻滞时间较长，易引发术后腰部不适以及尿潴留。8 mg 向尾端或向头端注药均可以达到理想的麻醉效果，但向头端注药术后不良反应较多。蛛网膜下隙阻滞常见的不良反应主要包括恶心呕吐、尿潴留、腰部不适以及头痛，而这些不良反应的发生率及发生程度与循环血容量、阻滞平面、合并症以及局麻药的剂量等相关。本研究结果显示罗哌卡因 8 mg 向尾注药组的尿潴留以及腰部不适的发生率均明显低于其他三组，表明向尾端迅速注射罗哌卡因 8 mg 进行蛛网膜下隙阻滞，不仅对肛肠手术患者具有显著的临床麻醉效果，且不良反应少，有助于加速患者的恢复。分析其原因为由于向尾端迅速注射罗哌卡因 8 mg 的剂量较小，麻醉作用会迅速消退，术后患者的排尿功能以及肌张力恢复速度快，使得术后尿潴留的发生率较低；由于向尾端注射的阻滞平面较低，使下肢的运动阻滞较少，患者的双下肢可以正常进行活动，可采用舒适体位，防止术后长期处于平卧位不动，因而术后无腰部不适反应发生。

综上所述，向尾端迅速注射罗哌卡因 8 mg 进行蛛网膜下隙阻滞对肛肠手术患者具有显著的临床麻醉效果，且安全性最高，有助于加速患者术后恢复。

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