

doi: 10.13241/j.cnki.pmb.2017.14.042

平行侧入法硬膜外穿刺 CSEA 对剖宫产术后腰背痛的影响 *

李玲霞 苏鸿莉 王 敏 胡 彬 段雨杉

(延安大学附属医院麻醉科 陕西 延安 716000)

摘要 目的:探讨平行侧入法硬膜外穿刺腰硬联合麻醉对剖宫产术后腰背痛的影响。**方法:**选择 2014 年 10 月至 2016 年 9 月在我院行剖宫产的产妇 95 例,将其随机分为两组。对照组 45 例,产妇接受平行直入法硬膜外穿刺腰硬联合麻醉,观察组 50 例产妇接受平行侧入法硬膜外穿刺麻醉。比较两组产妇术后宫缩、伤口、腰背疼痛 VAS 评分、术中穿刺情况、术后使用镇痛泵的有效按压次数及术后 3 d、7 d、14 d 和 2 个月后腰背疼痛的情况。**结果:**观察组产妇术后宫缩、伤口以及腰背疼痛评分、术后使用镇痛泵的有效按压次数均显著低于对照组($P<0.05$),且术中一次性穿刺成功率显著高于对照组($P<0.05$),且术后 7 d、14 d 以及 2 个月腰背痛的发生率显著低于对照组($P<0.05$)。**结论:**平行侧入穿刺法行腰硬联合麻醉可有效提高剖宫产产妇一次穿刺成功率,显著缓解产妇的术后疼痛,并降低术后腰背疼痛的发生率。

关键词:平行侧入法;硬膜外穿刺;腰硬联合麻醉;剖宫产;术后腰背痛

中图分类号:R719;R614 **文献标识码:**A **文章编号:**1673-6273(2017)14-2770-03

Effect of Epidural Puncture with Paralleling Side on the Postoperative Low Back Pain of Patients with Cesarean Section Undergoing CSEA*

LI Ling-xia, SU Hong-li, WANG Min, HU Bin, DUAN Yu-shan

(Department of Anesthesiology, Yanan University Affiliated Hospital, Yan'an, Shaanxi, 716000, China)

ABSTRACT Objective: To explore the effect of epidural puncture with paralleling side on the postoperative low back pain of patients with cesarean section undergoing combined spinal epidural anesthesia. **Methods:** 95 patients with cesarean section were enrolled in our hospital from October 2014 to September 2016 were selected and divided into two groups, the control group ($n=45$) accepted epidural puncture with paralleling straight method for combined spinal epidural anesthesia, and the study group ($n=50$) adopted anesthesia with paralleling side puncture. The VAS scores of uterine contraction, incision pain and low back pain, condition of puncture, effective pressing for analgesia pump and the incidence of low back pain on the 3rd, 7th, 14th day and at the 2nd month after operation were compared between two groups. **Results:** The VAS scores of uterine contraction, incision pain and low back pain of study group were significantly lower than those of the control group ($P<0.05$), and the puncture success rate with one-time of patients of study group was remarkably higher than that of the control group ($P<0.05$). The times of effective pressing for analgesia pump in study group was significantly fewer than that of the control group ($P<0.05$), and the incidence of low back pain on the 3rd, 7th, 14th day and at the 2nd month after operation were lower than those of the control group ($P<0.05$). **Conclusions:** Epidural puncture with paralleling side method for cesarean section patients undergoing combined spinal epidural anesthesia not only increased the puncture success rate with one-time, but also remarkably relieved the postoperative pain of parturient women and decreased the incidence of postoperative low back pain.

Key words: Side Puncture with parallel; Epidural puncture; Combined spinal epidural anesthesia; Cesarean section; Postoperative low back pain

Chinese Library Classification(CLC): R719; R614 **Document code:** A

Article ID: 1673-6273(2017)14-2770-03

前言

近几年,我国剖宫产率已居世界首位^[1]。椎管内麻醉是我国剖宫产术中麻醉的主要方式,腰硬联合麻醉(Combined spinal epidural anesthesia, CSEA)是目前临床上常用的一种新型椎管内阻滞技术,其麻醉用量少,镇痛起效时间迅速,镇痛效果好,广泛应用于下腹部和下肢手术。然而,其中剖宫产产妇常常主诉术后疼痛,尤其是术后腰背痛等相关并发症^[2]。据报道,剖

宫产产妇行椎管内麻醉术发生术后腰背痛的发生率显著高于非外科手术^[3]。临床研究表明产妇常常因其身体生理特点的限制,比如肥胖、腹部膨隆导致产妇不易屈膝弓背,穿刺定位不准确^[4],给直入法穿刺带来一定的困难。本研究采用平行侧入法硬膜外穿刺腰硬联合麻醉,并与直入法比较,探讨平行侧入法硬膜外穿刺腰硬联合麻醉对剖宫产产妇术后腰背疼痛的影响,现将研究结果报道如下:

1 资料和方法

* 基金项目:陕西省延安市科学技术局基金项目(2015HM-01-05)

作者简介:李玲霞(1973-),女,本科,主治医师,研究方向:临床麻醉,电话:15891180098, E-mail: lilixia_1973@msdthesisonline.cn

(收稿日期:2017-02-07 接受日期:2017-02-28)

1.1 临床资料

选择 2014 年 10 月至 2016 年 9 月在我院行首次剖宫产手术的产妇 95 例,所有产妇麻醉等级在 ASA I - II 级。排除标准:有既往腰背疼痛史;有椎管麻醉禁忌症;有药物过敏史;有其他心肝肾器官功能疾病;凝血障碍产妇。按照随机原则将两组产

妇分为两组,对照组 45 例产妇,观察组 50 例,两组产妇一般资料见表 1,其年龄、体重、孕周及手术时间等资料差异不显著($P>0.05$),具有可比性。所有产妇均对本研究知情,且经过医院伦理委员会同意。

表 1 两组产妇一般资料的比较($\bar{x}\pm s$)

Table 1 The comparison of general conditions between two groups of puerpera($\bar{x}\pm s$)

Groups	Number	Age/year	Weight/kg	Gestational weeks	Operation time/min
Study Group	50	26.8 $\pm$ 1.0	76.3 $\pm$ 2.5	38.9 $\pm$ 1.2	39.8 $\pm$ 3.5
Control Group	45	26.5 $\pm$ 1.6	77.5 $\pm$ 2.7	39.2 $\pm$ 0.8	40.3 $\pm$ 3.7

1.2 麻醉方法^[5]

所有产妇术前常规禁食 8 h,禁饮禁药 4 h,进入手术室后开放上肢静脉通道,输注乳酸林格氏液,连接监护仪,实施监测产妇常规生命体征。两组产妇采用左侧卧位,于 L3-4 行硬膜外穿刺。对照组产妇采用平行直入法进行硬膜外穿刺,穿刺针孔斜面垂直皮肤进针,依次刺入皮肤、皮下组织、棘上韧带,棘间韧带,待针进入黄韧带后旋转针口斜面垂直于脊柱轴线,突破黄韧带,待有落空感即进入硬膜外腔。观察组产妇采用平行侧入法进行穿刺,穿刺针孔斜面向上,针与皮肤呈 75° 角对准棘突间孔刺入,避开棘韧带,经棘突间孔刺破黄韧带进入硬膜外腔。两组产妇确认刺入成功后,针内行腰麻穿刺,待脑脊液有外流现象后注入 0.75%布比卡因 2 mL+50%葡萄糖注射液 0.2 mL+ 脑脊液 0.8 mL 共 3 mL,注药 2.5 mL 后退出腰麻针,迅速置入硬膜外导管。术中根据产妇实际麻醉情况,经硬膜外酌情追加用药,手术结束后,产妇连接 PCEA 泵施行术后镇痛,所有产妇 PCEA 泵内药物配方相同。

1.3 观察指标及评价标准

表 2 两组产妇术后疼痛评分以及穿刺成功率的比较

Table 2 The comparison of postoperative VAS score and the success rate of puncture between two groups of puerpera

Groups	Number	VAS score($\bar{x}\pm s$)			Puncture success rate [n(%)]		
		Uterine contraction	Incision pain	Low back pain	Primary	Second	Up-second
Study Group	50	2.4 $\pm$ 1.0*	2.6 $\pm$ 0.5*	2.5 $\pm$ 0.8*	42(84.0)*	8(16.0)	0(0.0)
Control Group	45	3.5 $\pm$ 0.9	3.6 $\pm$ 0.4	3.3 $\pm$ 1.1	30(66.7)	7(15.6)	4(8.9)

Note: * $P<0.05$: compared with the control group.

2.2 两组产妇术后使用镇痛泵的有效按压次数以及腰背痛发生情况的比较

由表 3 可见,观察组产妇术后使用镇痛泵的有效按压次数显著少于对照组($P<0.05$);且观察组术后 7 d、14 d 以及 2 个月后腰背痛的发生率显著低于对照组产妇($P<0.05$)。

3 讨论

据统计,我国大部分城市医院的剖宫产率高达 40%以上,少数医院甚至超过 60%,远高于 WHO 规定的 15%^[7,8],剖宫产麻醉也成为临床关注的热点之一。合适且效果显著的产科麻醉

评价两组产妇术后宫缩、伤口、腰背疼痛 VAS 评分,记录两组产妇术中穿刺情况并进行统计学分析;比较两组产妇术后使用镇痛泵的有效按压次数,记录并分析两组产妇术后 3 d、7 d、14 d 以及 2 个月后腰背痛的情况。VAS 评分标准^[9]:无痛:0 分;轻度疼痛:0-3 分;中度疼痛:4-6 分;重度疼痛:7-10 分。

1.4 统计学分析

采用 SPSS17.0 软件进行统计学分析,计量资料以均数 $\pm$ 标准差($\bar{x}\pm s$)表示,组内比较采用重复测定数据的方差分析,组间比较采用 t 检验,计数资料采用 χ^2 检验分析,以 $P<0.05$ 为差异有统计学意义。

2 结果

2.1 两组产妇术后疼痛及穿刺成功率的比较

由表 2 可见,观察组产妇术后宫缩、伤口以及腰背疼痛评分显著低于对照组($P<0.05$),且前者术中一次性穿刺成功率显著高于对照组($P<0.05$)。

对于产妇术后恢复以及母婴交流至关重要,研究表明产妇生产后强烈的疼痛感使交感神经兴奋,增加产妇机体耗氧量,表现出烦躁不安、忧郁等不良情绪,降低产妇对婴儿的照顾能力,且疼痛焦虑等影响产妇大脑皮层功能,导致母亲垂体泌乳素的分泌下降,乳汁分泌不足^[9]。目前,我国临床常采用腰硬联合麻醉用于剖宫手术,其麻醉起效迅速,麻醉剂使用剂量较少,时间维持可控性较强,肌松效应明确,术后镇痛效果显著^[2]。然而,临床研究表明腰部疼痛和穿刺点压痛是剖宫产产妇行腰硬联合麻醉后的主要并发症之一^[10],多数产妇术后 2 周内可自行缓解,少数则会持续一年以上,严重影响产妇术后恢复和其生活质量^[11]。

表 3 两组产妇产后使用镇痛泵的有效按压次数以及腰背痛发生情况的比较

Table 3 The comparison of postoperative times of effective pressing for analgesia pump and the incidence of low back pain between two groups of puerpera

Groups	Number	Effective pressing times/times	Postoperative [n(%)]			
			3 d	7 d	14 d	2 month
Study Group	50	3.2± 0.8*	17(34.0)	3(6.0)*	1(2.0)*	0(0.0)*
Control Group	45	6.1± 1.3	16(35.6)	10(22.2)	5(11.0)	2(4.4)

Note: *P<0.05: compared with the control group.

有研究表明剖宫产术后腰背疼痛与产妇自身生理结构、术中麻醉穿刺路径、穿刺方法及穿刺损伤肌肉韧带相关^[12,13]。产妇妊娠期间较高的激素含量使得产妇韧带松弛，易引起骶髂劳损；子宫压迫使得产妇腰骶部前弯增大，腰椎负重增加^[14]；大多数产妇因肥胖、腹部膨隆使得屈膝弓背困难，穿刺间隙狭窄导致定位不准确^[15]。以往行腰硬联合麻醉常采用平行直入法，穿刺针需依次穿过皮肤、皮下组织、棘上韧带、棘间韧带、黄韧带等，一定程度损伤机体韧带结构，表现为局部充血、水肿，而韧带属于人体致密的结缔组织，本身血供较少，易发生无菌性炎症，受损的韧带纤维修复较慢，外界伤害性刺激通过影响神经末梢致痛物质的释放是的患者疼痛感增强^[16,17]。此外，直入法穿刺常因为穿刺定位不准确而反复穿刺，穿刺次数与产妇产后腰背疼痛的发生率密切相关^[18]。为了改善产妇产后恢复情况，提高其生活质量，本研究采用平行侧入法行腰硬联合麻醉。与直入法相比，侧入法穿刺可以避免损伤机体韧带结构，选择合适的入路途径，依次通过皮肤、皮下组织、以及黄韧带直达硬膜外腔^[19]。Grau T 等研究员经超声证实侧入法穿刺时间隙较直入法更宽，能够降低穿刺难度，避免反复穿刺^[20]。

本研究比较了接受平行直入法硬膜外穿刺腰硬联合麻醉和平行侧入法硬膜外穿刺麻醉产妇产后疼痛缓解的情况，研究结果显示接受平行侧入法硬膜外穿刺麻醉的产妇产后宫缩、伤口以及腰痛评分显著低于接受平行直入法硬膜外穿刺腰硬联合麻醉的产妇，且前者一次性穿刺成功率显著高于后者，提示接受平行侧入法硬膜外穿刺麻醉的产妇麻醉效果显著更优，有效缓解了产妇产后疼痛，且麻醉时穿刺较平行直入法更加容易。此外，接受平行侧入法硬膜外穿刺麻醉的产妇产后使用 PECA 镇痛泵的有效按压次数显著低于接受平行直入法硬膜外穿刺腰硬联合麻醉的产妇，术后 7 d、14 d 以及 2 个月，术后腰背痛的发生率显著较接受平行直入法硬膜外穿刺腰硬联合麻醉显著降低，表明平行侧入穿刺法不仅可以有效缓解产妇产后疼痛，降低反复穿刺次数及使用镇痛泵的有效按压次数，同时显著降低产妇产后腰背疼痛的发生率。

综上所述，采用平行侧入穿刺法行腰硬联合麻醉用于剖宫产手术，可以有效提高穿刺成功率，显著缓解产妇产后疼痛，降低术后腰背疼痛的发生率。

参 考 文 献(References)

[1] 张英秀, 崔改英, 李霞, 等. 产妇产后选择性剖宫产影响因素的研究进展[J]. 河北医药, 2014(4): 592-593
Zhang Ying-xiu, Cui Gai-ying, Li-Xia, et al. Research Progress on the influencing factors of selective cesarean section [J]. Hebei Med J, 2014(4): 592-593

[2] Mai W A, Elzayyat N S, Abdelhaq M M, et al. A comparative study of general anesthesia versus combined spinal - epidural anesthesia on the fetus in cesarean section [J]. Egyptian Journal of Anaesthesia, 2014, 30(2): 155-160
[3] Zhao Y Z. Clinical observation of combined spinal-epidural anesthesia of different approaches applied in cesarean section [J]. Anatomy Research, 2014, 166(3): 485-507
[4] 张庆梅, 夏晓琼, 查显忠. 不同体位穿刺腰硬联合麻醉在肥胖产妇剖宫产手术中的比较[J]. 安徽医科大学学报, 2014(1): 110-112
Zhang Qing-mei, Xia Xiao-qiong, Cha Xian-zhong. Comparison of different position puncture combined spinal epidural anesthesia in cesarean section of obese women [J]. Acta Universitatis Medicinalis Anhui, 2014(1): 110-112
[5] 张子江, 刘丽妹. 侧入法腰麻 - 硬膜外联合麻醉在下腹部及下肢手术的临床观察[J]. 中外医疗, 2013, 32(15): 49-49
Zhang Zi-jiang, Liu Li-mei. Clinical observation of combined spinal epidural anesthesia for lower abdominal and lower limb surgery[J]. China Foreign Medical Treatment, 2013, 32(15): 49-49
[6] Rausch M, Zehetleitner M. A comparison between a visual analogue scale and a four point scale as measures of conscious experience of motion[J]. Consciousness & Cognition, 2014, 28(6): 126-140
[7] 陈晓端, 石一复. 剖宫产后瘢痕部位相关病变临床及病理改变[J]. 中华病理学杂志, 2016, 45(10): 731-733
Chen Xiao-duan, Shi Yi-fu. Clinical and pathological changes of scar related lesions after cesarean section[J]. Chinese Journal of Pathology, 45(10): 731-733
[8] 林小珍, 陈小红. 待产孕妇选择剖宫产 2626 例原因分析[J]. 福建医药杂志, 2011, 33(4): 71-72
Lin Xiao-zhen, Chen Xiao-hong. Analysis of 2626 pregnant women of cesarean section due to cesarean section[J]. Fujian Medical Journal, 2011, 33(4): 71-72
[9] Telnes A, Skogvoll E. Transversus abdominis plane block vs. wound infiltration in Caesarean section: a randomised controlled trial. [J]. Acta Anaesthesiologica Scandinavica, 2015, 59(4): 496
[10] Zhao Y Z. Clinical observation of combined spinal-epidural anesthesia of different approaches applied in cesarean section [J]. Anatomy Research, 2014, 166(3): 485-507
[11] Fattahi Z, Hadavi S M, Sahmeddini M A. Effect of ondansetron on post-dural puncture headache (PDPH) in parturients undergoing cesarean section: a double-blind randomized placebo-controlled study [J]. Journal of Anesthesia, 2015, 29(5): 702
[12] 王海龙, 于丹. 不同方式腰硬联合穿刺对剖宫产术后棘韧带炎及腰痛发生率的影响[J]. 中国医学创新, 2012(28): 135-136

- acellular human dermal allograft [J]. Arch Otolaryngol Head Neck Surg, 1998,124(1): 73-78
- [17] 覃道芬,陈峰,陈杰,等.鼻内镜下三层移植植物鼻中隔穿孔修补术[J].中国微创外科杂志,2009,9(7): 644-650
Qin Dao-fen, Chen Feng, Chen Jie, et al. Repair of nasal septum perforation with three - layer graft under nasal endoscope [J]. Chin J Minim Inva Surg, 2009, 9(7): 644-650
- [18] 程岚,杨军,吴皓,等.纽扣式电池鼻腔异物所致鼻化学腐蚀伤的并发症和治疗[J].上海交通大学学报(医学版),2007,27(02): 221-222
Cheng Lan, Yang Jun, Wu Hao, et al. Complications and Management of Nose - Chemical Corrosive Injury Caused by Button Battery[J]. J Shanghai Jiaotong Univ, 2007, 27(02): 221-222
- [19] 冯云海,殷善开,张玉君.鼻内镜下局限性鼻中隔偏曲的微创治疗[J].上海交通大学学报(医学版),2006,26(01): 93-95
Feng Yun-hai, Yin Shan-kai, Zhang Yu-jun. Minimally invasive treatment of localized nasal septum deviation under nasal endoscope [J]. J Shanghai Jiaotong Univ, 2006, 26(01): 93-95
- [20] 林文彪,张龙城,全超坤.鼻内镜下同种异体鼻中隔软骨移植术治疗鼻中隔穿孔[J].中国耳鼻咽喉颅底外科杂志,2013,19(02): 113-115
Lin Wen-biao, Zhang Long-cheng, Quan Chao-kun. Endoscopic repair of nasal septal perforation with transplantaion of allograft septal cartilage[J]. Chin J Otorhinolaryngol-skull Base Surg, 2013, 19(02): 113-115
- [21] 庞伟.鼻内镜下自体颞肌筋膜包裹筛骨垂直板修补鼻中隔穿孔疗效观察[J].天津医药,2015,43(06): 656-658+708
Pang Wei. Effect of temporal fascia wrapping ethmoid perpendicular plate on repair of nasal septal perforation through endoscopic surgery [J]. Tianjin Med J, 2015, 43(06): 656-658+708
- [22] 魏宏权,王洪明,臧健,等.带血管蒂鼻中隔黏膜瓣在鼻内镜下前颅底缺损修复重建中的应用[J].中国耳鼻咽喉颅底外科杂志,2014,20(06): 490-494
Wei Hong-quan, Wang Hong-ming, Zang Jian, et al. Application of vascularized nasoseptal flap to endoscopic anterior skull base reconstruction [J]. Chin J Otorhinolaryngol-skull Base Surg, 2014, 20(06): 490-494
- [23] 吴松坡,张延龄,冯小敏.鼻内窥镜下单侧带蒂下鼻甲黏膜瓣修补鼻中隔穿孔[J].医药论坛杂志,2011,32(01): 138-139
Wu Song-po, Zhang Yan-ling, Feng Xiao-min. Repair of nasal septal perforation with unilateral pedicle inferior turbinate mucosal flap under nasal endoscope[J]. J Med Forum, 2011, 32(01): 138-139

(上接第 2772 页)

- Wang Hai-long, Yu Dan. The effect of different ways of combined spinal and epidural puncture on the incidence of post-operative spinal inflammation and low back pain after cesarean section [J]. Medical innovation of China, 2012(28): 135-136
- [13] Noghabi S P, Hamzei A, Nazemi H, et al. Correlative factors of post dural puncture backache in cesarean section [J]. Journal of Jahrom University of Medical Sciences, 2014, 11(4): 17-25
- [14] Ramachandra P, Maiya A G, Kumar P, et al. Prevalence of musculoskeletal dysfunctions among Indian pregnant women. [J]. Journal of Pregnancy, 2015, 2015: 1-4
- [15] Washington Cole KO, Gudzone KA, Bleich SN, et al. Providing prenatal care to pregnant women with overweight or obesity: Differences in provider communication and ratings of the patient-provider relationship by patient body weight [J]. Patient Educ Couns, 2016, 1(16): 30583
- [16] Lee H M, Kim S H, Hwang B Y, et al. The effects of prophylactic bolus phenylephrine on hypotension during low-dose spinal anesthesia for cesarean section [J]. International Journal of Obstetric Anesthesia, 2016, 44(1): 207-209
- [17] Huang C H, Hsieh Y J, Wei K H, et al. A comparison of spinal and epidural anesthesia for cesarean section following epidural labor analgesia: A retrospective cohort study. [J]. Acta Anaesthesiologica Taiwanica, 2015, 53(1): 7
- [18] Zhao Y Z. Clinical observation of combined spinal-epidural anesthesia of different approaches applied in cesarean section [J]. Anatomy Research, 2014, 166(3): 485-507
- [19] Dousei T, Fujii T, Iga M, et al. Combined Spinal-epidural Anesthesia for Cesarean Section in a Patient with Ventriculoperitoneal Shunt[J]. Journal of Japan Society for Clinical Anesthesia, 2016, 36(1): 15-19
- [20] Grau T, Leipold R W, Conradi R, et al. Ultrasound control for presumed difficult epidural puncture [J]. Acta Anaesthesiologica Scandinavica, 2001, 45(6): 766-771