

# 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

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**摘要** 目的 观察不同体位穿刺腰硬联合麻醉(CSEA)在肥胖产妇剖宫产手术中对产妇麻醉效果、麻醉操作和血流动力学的影响。方法 选择剖宫产手术肥胖产妇80例[体重指数(BMI)  $\geq 30$ ], ASA分级I或II级, 随机均分为两组, A组: 侧卧位腰硬联合麻醉, 腰麻液为0.5%盐酸罗哌卡因2.4 ml。B组: 坐位腰硬联合麻醉, 腰麻液同A组。记录两组一次穿刺成功率、麻醉平面、麻醉效果、血流动力学变化及不良反应发生情况(包括术中仰卧位低血压综合征、脊麻后头痛以及术后脊神经刺激)。结果 B组麻醉效果与A组相比差异无统计学意义, 但一次穿刺成功率高于A组( $P < 0.05$ ), 血流动力学变化差异有统计学意义( $P < 0.05$ )。仰卧位低血压综合征的发生率低于A组( $P < 0.05$ )。结论 两种体位腰硬联合麻醉在肥胖产妇剖宫产手术麻醉中具有相同的麻醉效果, 但坐位腰硬联合麻醉比侧卧位更易于穿刺操作, 血流动力学更稳定。

**关键词** 腰硬联合麻醉; 坐位; 肥胖产妇; 剖宫产术

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腰硬联合麻醉因效果确切, 脊麻用药量小, 又可发挥连续硬膜外麻醉的灵活性, 在剖宫产手术中应用广泛<sup>[1]</sup>。但肥胖产妇穿刺难度大, 平面不易控制, 血流动力学变化大, 易出现仰卧位低血压综合征<sup>[2]</sup>, 而引起大家的重视。该研究旨在讨论不同体位腰硬联合麻醉在肥胖产妇剖宫产手术麻醉中的比较, 为临床提供参考。

## 1 材料与方法

**1.1 病例资料** 本研究经医院伦理委员会批准, 所有受试者均取得患者及其家属的授权委托。选择剖宫产肥胖产妇共80例, ASA I或II级。体重指数(BMI)  $\geq 30$  kg/m<sup>2</sup>, 排除病态肥胖者(BMI  $\geq 40$  kg/m<sup>2</sup>)。其中急诊手术60例, 择期手术20例。

**1.2 麻醉方法** 入室后常规监测血压(BP)、心率(HR)、脉搏氧饱和度(SPO<sub>2</sub>)及心电图(ECG)。开

放外周静脉通路。经10 min快速静脉输注羟乙基淀粉7 ml/kg。80例产妇随机均分为两组。均以L<sub>3-4</sub>进行穿刺。两组病例的麻醉操作均由同一位有经验的麻醉医师进行。A组产妇侧卧位穿刺。B组产妇坐位穿刺。两组腰麻液均用0.75%盐酸罗哌卡因(耐乐品)1.6 ml和10%葡萄糖0.8 ml配成0.5%盐酸罗哌卡因2.4 ml, 在10~12 s注入蛛网膜下腔。抽出腰麻针后向头端硬膜外置管3 cm, 固定硬膜外导管后, A组改仰卧位, B组腰麻液推注后40 s仰卧位。15 min后感觉阻滞平面低于T8时, 向硬膜外追加1.5%利多卡因(2%盐酸利多卡因15 ml + 0.75%盐酸罗哌卡因5 ml)5 ml。必要时5 min后再追加5 ml。术中以10 ml/(kg·h)静脉输注乳酸林格氏液。

**1.3 观察指标** 采用酒精棉球擦拭法, 从局麻药注入蛛网膜下腔产妇翻身平卧后, 由同一观察者为产妇温觉缺失情况进行评估, 并根据感觉平面的高低, 调节产妇的体位, 同时记录感觉阻滞平面(平均5 min后感觉平面固定)。麻醉效果评价则从镇痛(患者切皮时无反应)、肌松(由产科医师术中评估)和牵拉反应(包括恶心、呕吐、身体不适等)3个方面进行分级。记录一次穿刺成功率, 不良反应发生率及麻醉前(T<sub>1</sub>)、麻醉后1 min(T<sub>2</sub>)、5 min(T<sub>3</sub>)、15 min(T<sub>4</sub>)的收缩压(SBP)、舒张压(DBP)、HR。

**1.4 统计学处理** 采用SPSS 18.0统计软件进行分析。正态分布的计量资料以 $\bar{x} \pm s$ 表示; 计数资料比较采用 $\chi^2$ 检验。

## 2 结果

**2.1 一般情况** 两组产妇的年龄、身高、BMI值、孕周和手术时间比较差异均无统计学意义, 见表1。

表1 两组产妇一般情况的比较( $n=40$ ,  $\bar{x} \pm s$ )

组别	年龄 (岁)	身高 (cm)	BMI值 (kg/m <sup>2</sup> )	手术时间 (min)
A	26.25 $\pm$ 3.09	159.53 $\pm$ 4.24	34.23 $\pm$ 3.55	51.25 $\pm$ 8.03
B	26.15 $\pm$ 2.71	159.65 $\pm$ 4.93	34.57 $\pm$ 4.22	52.13 $\pm$ 7.37

**2.2 血流动力学变化** 两组产妇麻醉前SBP、DBP、HR水平比较, 差异均无统计学意义。而T<sub>2</sub>、

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表2 两组产妇 T<sub>1</sub>、T<sub>2</sub>、T<sub>3</sub>、T<sub>4</sub> 的 SBP、DBP、HR 水平比较 (n=40  $\bar{x} \pm s$ )

时间	SBP(kPa)		DBP(kPa)		HR(次/min)	
	A组	B组	A组	B组	A组	B组
T <sub>1</sub>	17.66 ± 0.77	17.90 ± 0.77	12.03 ± 0.51	12.05 ± 0.53	82.32 ± 3.46	83.02 ± 3.51
T <sub>2</sub>	16.72 ± 0.70	17.38 ± 0.62*	11.38 ± 0.48	11.98 ± 0.52*	90.56 ± 3.75	86.95 ± 3.66*
T <sub>3</sub>	16.03 ± 0.56	16.73 ± 0.62*	10.88 ± 0.45	11.50 ± 0.47*	94.78 ± 3.98	89.05 ± 3.63*
T <sub>4</sub>	15.70 ± 0.54	16.43 ± 0.61*	10.36 ± 0.40	11.25 ± 0.45*	98.85 ± 4.02	92.31 ± 3.37*

与 A 组比较: \* P &lt; 0.05

T<sub>3</sub>、T<sub>4</sub> 时 A、B 组产妇的 SBP、DBP 均下降 (P < 0.05), HR 均升高 (P < 0.05), 但 B 组 SBP、DBP 高于 A 组 (P < 0.05), HR 低于 A 组 (P < 0.05), 见表 2。

**2.3 麻醉效果** 两组产妇的麻醉效果未见明显差异, B 组的一次穿刺成功率高于 A 组 (P < 0.05), 感觉阻滞平面低于 A 组 (P < 0.05), 硬膜外用药的例数少于 A 组 (P < 0.05), 见表 3。

表3 两组产妇一次成功率、感觉阻滞平面、麻醉效果优良率和硬膜外用药物例数的比较 (n=40)

组别	一次穿刺	感觉阻滞	麻醉效果	硬膜外用药物
	成功率 [n(%) ]	平面	优良率 [n(%) ]	[n(%) ]
A	29(72.50)	T <sub>6</sub> (T <sub>5</sub> ~T <sub>8</sub> )	39(97.50)	4(10.00)
B	36(90.00)*	T <sub>8</sub> (T <sub>6</sub> ~T <sub>10</sub> )	37(92.50)	5(12.50)

与 A 组比较: \* P &lt; 0.05

**2.4 不良反应** 与 A 组比较, B 组的仰卧位低血压发生率明显减少 (P < 0.05)。头痛和神经刺激发生率的差异均无统计学意义, 见表 4。

表4 两组产妇不良反应的比较 [n=40 n(%) ]

组别	仰卧位低血压综合征	头痛	神经刺激
A	6(15.00)	1(2.50)	3(7.50)
B	1(2.50)*	1(2.50)	1(2.50)

与 A 组比较: \* P &lt; 0.05

### 3 讨论

妊娠合并肥胖症容易使呼吸、循环、消化、内分泌系统产生一系列生理、病理生理及解剖学变化。肥胖产妇较之正常体重产妇剖宫产的概率更大, 并给麻醉医师的操作和管理带来很多困难。

由于产妇特殊的生理原因, 以及全麻药物对胎儿的影响, 目前国内外多采用椎管内麻醉。而腰硬联合麻醉由于起效快, 肌松好, 产妇术中清醒, 可自我气道保护, 加之术后可对产妇进行硬膜外镇痛, 已越来越多的在剖宫产手术中应用。但腰硬联合麻醉由于快速及较大范围的神经阻滞, 引起阻滞平面的血管扩张, 导致血容量不足, 血压下降, 同时由于麻

醉后的肌肉松弛, 受孕的子宫压迫产妇下腔静脉, 导致下肢静脉回流减少, 因此易引起产妇麻醉后的仰卧位低血压综合征。加之肥胖产妇因其体型特殊, 体表骨性标志不清, 侧卧位操作难度较大。而坐位时身体两侧对称, 臀裂可以帮助我们大致估计正中线的位置。有研究<sup>[3]</sup>证明坐位时皮肤至硬膜外腔的距离较侧卧位时短, 因此, 本研究对此类产妇选择性的进行坐位腰硬联合麻醉。同时麻醉前给予羟乙基淀粉 7 ml/kg 快速补液。

本研究显示坐位腰硬联合麻醉对于肥胖产妇的剖宫产手术麻醉具有较大的优势<sup>[4]</sup>。坐位腰硬联合麻醉在肥胖产妇中一次穿刺成功率明显高于侧卧位, 血流动力学变化也较侧卧位麻醉更平稳, 仰卧位低血压综合征的发生率也较侧卧位少。坐位腰硬联合麻醉神经刺激的例数较侧卧位少 2 例, 由于本研究观察的例数有限, 未得出统计学差异, 不能作两种穿刺方法的绝对依据, 但也可从中得出有价值的信息。本研究于两者麻醉效果和硬膜外用药物的比较, 虽然侧卧位有一定的优势, 但两者的比较没有明显差异。坐位腰硬联合麻醉与侧卧位腰硬联合麻醉具有相同的麻醉效果<sup>[5]</sup>, 但其一次穿刺成功率显著提高, 且血流动力学较平稳<sup>[6]</sup>, 术中术后并发症少。

### 参考文献

- [1] Choi D H, Kim J A, Chung I S. Comparison of combined spinal anesthesia and epidural anesthesia for cesarean section [J]. Acta Anaesth Scand 2004 44(2): 214-9.
- [2] Saravanakumar K, Rao S G, Cooper G M. The challengers of obesity and obstetric anesthesia [J]. Curr Opin Obstet Gynecol, 2006, 18(6): 631-5.
- [3] Bahk J H, Kim J H, Lee J S, et al. Computed tomography study of the lumbar (L<sub>3-4</sub>) epidural depth and its relationship to physical measurements in young adult men [J]. Reg Anesth Pain Med, 1998, 23(3): 262-5.
- [4] 米勒. 米勒麻醉学 [M]. 6 版. 曾因明, 邓小明, 主译. 北京: 北京大学医学出版社, 2006: 2332.
- [5] Obasuyi B I, Fyeface-Ogan S, Mato C N. A comparison of the haemodynamic effects of lateral and sitting positions during induction of spinal anaesthesia for caesarean [J]. Int J Obstet Anesth, 2013, 22(2): 124-8.

[6] Coppejans H C , Hendrickx E , Goossens J , et al. The sitting versus right lateral position during combined spinal-epidural anes-

thesia for cesarean delivery: block characteristics and severity of hypotension [J]. *Anesth Analg* 2006 ,102( 1) :243 - 7.

## Comparison of puncture in different positions with combined spinal and epidural anesthesia in obese parturients for cesarean section

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**Abstract Objective** To observe the influence of combined spinal and epidural anesthesia( CSEA) of different positions on the anesthesia effect , anesthesia operation and hemodynamic index during cesarean section of obese parturients. **Methods** Eighty obese parturients [BMI ≥ 30 ] undergoing cesarean section were randomly divided into two groups , that was group A and B , with 40 cases each. In group A , the parturients were required to undergo lateral decubitus position with 0.5% ropivacaine hydrochloride of 2.4 ml. In group B , the parturients were required to undergo sitting position with the same ropivacaine hydrochloride as group A. The following data was recorded , which were the percentage of one-attempt 's successful epidural needle placement , the anesthesia level , the anesthesia effect and the hemodynamic change. All the complications were also observed , such as the supine hypotension syndrome during operation , headache after spinal anesthesia and postoperative spinal nerve stimulation. **Results** The difference of anesthetic effect between the two groups was insignificant in statistics while group B 's rate of one-attempt successful puncture was higher than group A (  $P < 0.05$  ). The difference of hemodynamic index between them was significant in statistics (  $P < 0.05$  ) with group B 's rate of supine hypotension syndrome lower than group A. **Conclusion** Both body positions have the same anesthetic effect for obese parturients during cesarean section while the puncture operation of sitting position is easier than lateral decubitus position and the hemodynamic change is also more stable.

**Key words** combined spinal and epidural anesthesia; sitting position; obese parturients; cesarean section

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## Changes of regulatory T cells ,Th17 cells in rats with chronic obstructive pulmonary disease

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**Abstract Objective** To observe the change of regulatory T cells ( Treg) and Th17 cells in rat model of chronic obstructive pulmonary disease ( COPD) . **Methods** 30 rats were randomly divided into normal group , and model group. In addition to the normal group , the remaining rats were smoked plus lipopolysaccharide ( LPS) tracheal instillation method to establish COPD lung deficiency rat model. 28 days after the model copied , pulmonary function was tested using animals seized spirometer , interleukin ( IL) -1 $\beta$  , IL-10 , IL-17 , IL-35 in serum were detected by enzyme-linked immunosorbent assay , FoxP3 , IL-17 was detected in lung tissue by immunohistochemistry staining. Treg of peripheral was detected by flow cytometry. **Results** A large number of inflammatory cell infiltration and pulmonary alveolar interstitial intrinsic in rat model group. Compared with normal group , lung function parameters such as FEV<sub>0.3</sub> , FVC , FEV<sub>0.3</sub>/FVC were decreased in model group (  $P < 0.01$   $P < 0.05$  ); IL-1 $\beta$  , IL-17 were increased , expression of IL-17 in serum , IL-10 , IL-35 , FoxP3 , CD4 + CD25 + Treg were reduced (  $P < 0.01$   $P < 0.05$  ) . Correlation analysis showed that lung function parameters FEV<sub>0.3</sub> , FEV<sub>0.3</sub>/FVC , PEF , and IL-1 $\beta$  , IL-17 were negative correlation respectively , IL-35 , FoxP3 and CD4 + CD25 + Treg were positive correlation (  $P < 0.05$  ) . **Conclusion** There is high inflammatory response in COPD. The high inflammatory response is caused by the imbalanced expression of CD4 + CD25 + Treg and Th17 , which leads to increase in inflammatory response.

**Key words** chronic obstructive pulmonary disease; lung function; regulatory T cells; Th17 cells; inflammatory response