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2种麻醉方式对老年腔隙性梗死患者术后短期认知功能的影响

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[摘 要] **目的** 探讨腰-硬联合麻醉和全身麻醉对老年腔隙性梗死患者术后短期认知功能的影响。**方法** 选择2012年6月至2013年12月我院收治的择期行下腹部手术的老年腔隙性梗死患者50例作为研究对象,随机分为腰-硬联合麻醉组(联麻组)和全身麻醉组(全麻组),对比观察2组患者术后认知功能障碍的发生率,采用简易智能状态检测法(MMSE)评分和蒙特利尔认知估量表(MoCA)评分检测2组患者麻醉前及手术后的认知功能。**结果** 联麻组和全麻组术后认知功能障碍(POCD)的发生率分别为12%和32%,2组比较差异有统计学意义($P<0.05$);术后各时间点MMSE评分及MoCA评分均低于麻醉前,差异具有统计学意义($P<0.05$);联麻组患者MMSE评分及MoCA评分在术后3 h和6 h均高于全麻组,差异具有统计学意义($P<0.05$)。**结论** 手术麻醉对老年腔隙性梗死患者会造成一定程度的认知功能障碍,使用腰-硬联合麻醉相对于全身麻醉可降低该类患者认识功能障碍的发生率。

[关键词] 腔隙性梗死;麻醉;认知功能;老年
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Effect of two anesthesia ways on short-term cognitive function of elderly patients with lacunar infarction after surgery

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Abstract: Objective To investigate the influence of combined spinal-epidural anesthesia and general anesthesia on short-term cognitive function of elderly patients with lacunar infarction after surgery. **Methods** A total of 50 patients with lacunar infarction who underwent abdominal surgery in our hospital from June 2012 to December 2013 were selected as the research object, who were divided into spinal-epidural anesthesia group (combined group) and general anesthesia group (general group). The incidence of postoperative cognitive dysfunction of two groups were observed and compared. The mini-mental state examination (MMSE) and Montreal cognitive Assessment (MoCA) were used to evaluated the cognitive function before and postoperative 1 day. **Results** The probability of postoperative cognitive dysfunction (POCD) of combined group and the general group were 12% and 32%, respectively, and the POCD probability of combined group was lower than that of general group, the difference was significant ($P<0.05$). The MMSE score and MoCA score at postoperative 1 day of two groups were lower than those before anesthesia, the difference was significant ($P<0.05$). The MMSE score and MoCA score of combined group at postoperative 1 day were lower than that of general group, the difference was significant ($P<0.05$). **Conclusion** The anesthesia can cause a certain cognitive dysfunction for elderly patients with lacunar infarction, while the spinal-epidural anesthesia can reduce the incidence rate of POCD compared anesthesia.

Keywords: lacunar infarction; anesthesia; cognitive function; the elderly

随着人口老年化程度越来越严重,老年患者越来越多。很多老年患者在术前精神无明显异常,但手术后会出现不同程度的意识、定向、学习、记忆等方面的退化和损伤[1]。精神正常的老年患者接受非心脏手术后,7 d术后认知功能障碍(postoperative cognitive dysfunction, POCD)的发生率为25.8%[2]。腔隙性脑梗死是影响老年人认知功能障碍的重要原因之一,相关的研究显示不同程度的认知功能障碍往往会在腔隙性脑梗死患者术后发生[3-5]。本研究探讨2种麻醉方式对老年腔隙性梗死患者术后短期认知功能的影响,从而为该类疾病患者的麻醉方式选择提供理论依据。

1 资料与方法

1.1 临床资料

选择2012年6月至2013年12月于我院行择期下腹部手术的腔隙性梗死老年患者50例,随机分为腰-硬联合麻醉组(联麻组)和全身麻醉组(全麻组),每组25例。50例患者中7例有糖尿病史,15例有心肌梗死病史,24例有吸烟史。联麻组男16例,女9例,平均年龄(65.25±6.87)岁,体质量(62.83±5.37)kg,体重指数(25.13±2.64)kg/m^2;全麻组男15例,女10例,平均年龄(66.13±6.32)岁,体质量

(63.12 ±4.98) kg,体重指数(24.84 ±2.89) kg/m^2。参照全国第四届脑血管病会议制定的诊断标准将腔隙性梗死分为Ⅰ~Ⅲ级。对2组患者一般情况进行比较,2组患者在性别、年龄、体重指数、糖尿病史、心肌梗死病史、吸烟史等比较,差异均无统计学意义($P>0.05$)。

纳入标准:①患者均经过CT或MRI确诊为腔隙性梗死;②年龄大于等于60岁;③患者签署知情同意书;④通过医院伦理会论证并同意。

排除标准:①既往有精神病、帕金森病、阿尔茨海默病或服用过抗精神病药物;②合并肿瘤、免疫系统、血液系统等疾病;③有严重的肝、肾、心功能不全。

1.2 麻醉方法

联麻组患者采用腰-硬联合麻醉,全麻组患者采用全身麻醉。联麻组患者均给予面罩吸氧,L_2~L_3椎间隙联合硬膜外麻醉,蛛网膜下腔15 s内注入0.5%布比卡因7 mg,硬膜外腔视具体情况追加0.25%布比卡因,常规面罩吸氧;术后给予吗啡10 mg加罗哌卡因225 mg加生理盐水共100 mL硬膜外行自控镇痛(PCA),首剂量2 mL,持续1.8 mL/h,单次1.5 mL,镇痛48 h。全麻组患者给予丙泊酚1.5 mg/kg、顺式阿曲库铵0.2 mg/kg与芬太尼3 g/kg诱导麻醉,气管插管后机械通气,术中1%~2%异氟醚气管导管吸入复合2 mg/kg丙泊酚静脉微量泵持续注入麻醉,术毕0.002%芬太尼皮下PCA,首剂量2 mL,持续1.5 mL/h,单次1.5 mL,镇痛48 h。

1.3 评定方法

用简易智能状态检测法(MMSE)评分和蒙特利尔认知估量表(MoCA)评分检测2组患者麻醉前及手术后的认知功能,通过MMSE量表形式检测患者的定向力、记忆力、注意力、计算力、回忆能力及语言能力;通过MoCA量表检测患者注意与集中、执行功能、记忆、语言、视空间技能、抽象思维、计算和定向力。

1.4 统计学方法

所有数据采用SPSS 19.0进行统计学分析,对计量资料采用两独立样本t检验,对计数资料采用卡方检验,$P<0.05$为差异有统计学意义。脑功能图像用Analysis of Functional Neuroimaging软件进行处理。

2 结果

2.1 患者POCD的发生情况

联麻组和全麻组POCD的发生率分别为3例(12%)和8例(32%),联麻组低于全麻组,差异有统计学意义($P<0.05$)。

2.2 2组患者麻醉前及术后MMSE评分比较

2组患者术后3 h、6 h及1 d的MMSE评分均有不同程度的降低,与麻醉前相比,差异均具有统计学意义($P<0.05$)。术后3 h及6 h全麻组MMSE评分显著低于联麻组,差异具有统计学意义($P<0.05$);而术后1 d,2组MMSE评分比较,差异无统计学意义($P>0.05$),见表1。

表1 2组患者麻醉前及术后MMSE评分比较($\bar{x}\pm s$,$n=25$)

组别	麻醉前	术后3 h	术后6 h	术后1 d
联麻组	27.06 ±2.38	23.09 ±2.10*	24.87 ±1.50*	26.20 ±1.81*
全麻组	28.52 ±2.11	21.33 ±1.62*#	22.13 ±1.56*#	25.83 ±1.90*

*:与麻醉前比较,$P<0.05$;#:与联麻组比较,$P<0.05$

2.3 2组患者麻醉前及术后MoCA评分比较

2组患者术后3 h、6 h及1 d MoCA评分均有不同程度的降低,与麻醉前相比差异具有统计学意义($P<0.05$),而全麻组MoCA评分术后3 h、6 h及1 d显著低于联麻组,差异具有统计学意义($P<0.05$),见表2。

表2 2组患者麻醉前及术后MoCA评分比较($\bar{x}\pm s$,$n=25$)

组别	麻醉前	术后3 h	术后6 h	术后1 d
联麻组	27.96 ±0.58	23.89 ±1.33*	24.52 ±0.89*	26.13 ±1.03*
全麻组	27.13 ±0.37	21.79 ±0.87*#	22.98 ±1.21*#	24.48 ±1.13*#

*:与麻醉前比较,$P<0.05$;#:与联麻组比较,$P<0.05$

3 讨论

腔隙性梗死是中老年人的多发疾病,好发于丘脑、基底节区和脑桥。单一的腔隙梗死虽然不会引起严重的后果,但该病变能导致弥漫性脑小动脉形成,多发性腔隙也随之形成,从而产生新的梗死灶[6-7]。高龄、高血压、糖尿病、血脂代谢紊乱、肥胖等因素在该病的发生和发展中具有重要意义,会导致患者的逻辑能力、执行能力、记忆力、控制能力产生不利影响,进而导致老年患者认知功能障碍的发生[8-9]。

老年患者认知功能障碍的发生是多种因素协同作用引起的,确切病因仍然不清楚。低氧血症、心肺转流(CPB)、全麻药、高脂血症、低血压和低CO_2血症等是其危险因素和潜在原因[10-11]。根据相关研究,往往在术后1 d内即可发生认知功能的变化[12-13]。

本研究中,对老年腔隙性脑梗死患者采用2种不同的麻醉方式进行麻醉,使用临床上广泛应用的MMSE评分及MoCA评分系统对术后患者的认知功能进行评价,并运用fMRI对患者术前及术后脑运动相关功能区的变化情况进行对比观察。发现与术前相比,2种麻醉方式均会引起患者出现不同程度的POCD,但腰-硬联合麻醉组POCD发生率明显低于全麻组,全

麻药物的术后残留可能是导致 POCD 高发生率的重要原因。有研究显示 β-淀粉样蛋白(Aβ)在异氟醚的诱导下,可以增强其细胞毒性,促进神经细胞凋亡,产生顺行性遗忘效果[14-15]。老年痴呆患者老年斑病理变化与 Aβ 有着很大关系,它是促使病理变化的最大因素,从而增加细胞内自由基的聚集,导致神经元凋亡加重,进一步引起认知和记忆功能损伤,异丙酚对中枢神经递质和受体系统的影响最大,对已存在和新形成的空间记忆功能具有长期的损坏作用[16-17];另外,胆碱能受体阻断药(如东莨菪碱)具有一定的致遗忘作用,阿托品类药物能显著降低术后的数字记忆能力,严重者可出现短时失忆[18-19]。

麻醉药物对老年认知功能的影响已有深刻的认识[20]。本研究对腔隙性梗死的老年患者,应用不同的麻醉方式,观察术后其短期认知功能的变化,结果提示,2 种麻醉方式对老年患者均有不同程度的认知功能损害,但腰-硬联合的麻醉方式对老年患者的损伤小,对术后短期认知功能的影响小,值得临床合理选用。

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