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不同麻醉方式对老年肺肿瘤患者术后早期认知功能的影响*

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摘要 目的:探讨不同麻醉选择对老年肺肿瘤术后患者早期认知功能的影响。**方法:**分析我院 2011 年 3 月至 2013 年 3 月老年肺肿瘤患者,分别有 62 例用全凭静脉麻醉和 61 例用静吸复合麻醉的麻醉方法,记录手术时间和麻醉时间,用 MMSE 量表进行认知功能评分,分别评定手术前 1 天和手术后出麻醉室时及 1、3、5 天患者的认知功能,并判断患者的 POCD。**结果:**两组患者在手术时间和麻醉时间方面无统计学差异。与术前 1 天比较,全凭静脉麻醉组、静吸复合麻醉组出麻醉恢复室时、术后 1 d 时 MMSE 评分降低($P<0.05$);与术前 1 d 比较,两组在术后 3 天和 7 天时 MMSE 评分恢复正常($P>0.05$),两组患者之间的 MMSE 认知功能评分在术前、术后均无统计学差异($P>0.05$),出麻醉恢复室时,全凭静脉麻醉组发生 POCD 24 例(39.34%),全凭静脉麻醉组发生 25 例(40.32%),两组发生率比较无统计学差异($P>0.05$);术后 1 天、3 天、7 天两组分别 POCD 的发生率比较均无统计学意义($P>0.05$)。**结论:**老年患者用全凭静脉麻醉、静吸复合麻醉不同麻醉方法对老年患者术后早期发生认知功能障碍的影响无统计学差异。

关键词:麻醉;肺肿瘤;老年患者;认知功能

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Effects of Different Anesthesia Methods on the Cognitive Function for Elderly Patients with Lung Cancer*

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ABSTRACT Objective: To investigate the effects of different anesthesia methods on the cognitive function of elder patients with lung cancer. **Methods:** 62 cases with lung cancer patients with total intravenous anesthesia and other 61 patients with complexed anesthesia of intravenous anesthesia and inhalation anesthesia who were treated in our hospital from March 2011 to March 2013 were selected. Then the time of operation and anesthesia was recorded. MMSE scale was applied to recording the cognitive function at the first day, the 1, 3, 5 day after the surgery and POCD of patients was compared. **Results:** There was no statistically significance about the time for the operation and anesthesia. Compared with 1 day before operation, MMSE scores of both groups before surgery and in anesthesia recovery room decreased ($P<0.05$); MMSE scores of both groups at 3, 7 days after surgery remained the same ($P>0.05$). There was no statistically significant difference between two groups on MMSE cognitive function scoring ($P>0.05$). In anesthesia recovery room, 24 cases had POCD in the total intravenous group (39.34%), 25 cases had POCD in total intravenous group (40.32%), there was no significant difference between two groups ($P>0.05$); There was no significant difference on POCD occurrence rate at 1, 3, 7 days after surgery ($P>0.05$). **Conclusions:** There is no statistically significant difference between intravenous anesthesia and complexed anesthesia of intravenous anesthesia and inhalation anesthesia affecting in cognitive function in post-operative elderly patients.

Key words: Anesthesia; Lung cancer; Elderly patients; Cognitive function

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前言

肺肿瘤又称为支气管肺癌,是常见的恶性肿瘤之一,其发病率和死亡率均较高,多在 40 岁以上发病,60 岁~79 岁是发病高峰年龄。老年人呼吸功能降低,环境的恶化导致其肺肿瘤发生率日益增加^[1];目前肺肿瘤患者的治疗方法仍以手术为主,对于老年患者来说,非肿瘤手术时间较长,因此麻醉剂的用量相对较大,整个手术过程对患者的激性较大,导致老年患者术

后较易出现认知功能障碍(POCD)。临床对老年人术后认知功能障碍的定义为:老年手术患者术后出现精神错乱、焦虑、人格改变及记忆受损,其实质为老年术后出现的神经并发症。其诊断需要经过神经心理学的测试。临床研究资料显示,C-反应蛋白、肿瘤坏死因子等炎症因子水平的改变和老年患者术后认知功能障碍存在密切关系^[2,3]。本研究选择我院 2011 年 3 月至 2013 年 3 月住院的 180 例肺肿瘤老年患者,分别用不同的麻醉方式,观察其对患者术后早期认知功能的影响,以提高临床

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对麻醉影响老年手术患者术后认知功能的认识,为老年患者手术时麻醉剂及方式选择提供参考,先将研究结果报到如下:

1 资料与方法

1.1 临床资料

随机选取 2010 年 10 月 -2012 年 10 月,在我院行手术治疗的老年肺癌患者 180 例作为研究对象。将患者随机分成两组,其中全凭静脉麻醉组 61 例,年龄 60 岁~79 岁,男 30 例,女 31 例,小学及以下文化 8 例,初中文化 12 例,高中 10 例,高中以上文化 30 例;生命体征:BP93±8 mmHg、MAP77.8±11.2 mmHg、HR78.3±9.2 次/min、氧分压 310±10.2 mmHg、氧饱和度 97%±2.1%、液体入量 3500 ml±400 ml;静脉复合麻醉组 62 例,年龄 62 岁~80 岁,男 31 例,女 31 例,小学及以下文化 9 例,初中文化 11 例,高中 12 例,高中以上文化 30 例;生命体征:BP93±8 mmHg、MAP77.6±12.3 mmHg、HR 77.6±8.9 次/min、氧分压 312±8.2 mmHg、氧饱和度 96%±3.4%、液体入量 3600 ml±200 ml。两组患者的一般资料比较无显著性差异,具有可比性(P>0.05)。

1.2 麻醉方法

1.2.1 麻醉诱导 入室后,连接多功能检测仪,建立外周静脉通路,检测常规生命体征:包括收缩压、舒张压、心电图、心率、氧分压、氧饱和度、麻醉气体检测仪检测呼吸末期二氧化碳,维持二氧化碳在 30 mmHg~40 mmHg 之间,同时检测呼吸末期麻醉气体浓度。麻醉期间维持患者血压、心率波动小于基础值的 20%。患者术前均不给药,入室后先对患者进行称重,根据体重计算麻醉剂的用量。先按照 0.03 mg/kg 静注咪达唑仑,再按照 0.2 ug/kg~0.4 ug/kg 剂量静注依托咪酯、0.5 mg/kg 剂量静注阿曲库铵、2 ug/kg~4 ug/kg 剂量静注舒芬太尼,静注后行 5

min 面罩给氧,再行气管插管,机械通气。设置频率为 13 次/min,呼气末二氧化碳分压 35 mmHg~40 mmHg,潮气量 8 ml/kg~10 ml/kg。

1.2.2 麻醉维持 两组分别采用吸入全凭静脉麻醉和静脉复合麻醉维持。在插管固定完毕后两组分别立刻吸入全凭静脉麻醉和静脉复合麻醉。并连接麻醉气体检测仪检测全凭静脉麻醉和静脉复合麻醉的呼气末浓度,使呼气末浓度维持在 0.6~2MAC。开展上述工作的同时,采用微量泵按照的 0.15 μg/(kg·min)剂量恒速泵入芬太尼至手术结束。所有患者手术结束后均在麻醉恢复室进行恢复,待患者清醒后,呼吸功能完全恢复后(RP:10~25 次/min,吸入空气时,脉搏氧饱和度>93%,血流力学稳定,上呼吸道保持反射完全恢复),即可拔管。

1.3 监测及测定方法

研究人员分别于术前 1 d、麻醉苏醒时、术后 1 d、术后 3 d、术后 7 d 对患者的认知功能进行测试,测试项目共计 11 项,总分 30 分,测试得分低于 23 分者判为认知功能缺陷,教前一次测试降低 2 分以上者判为认知功能下降,采用 Z 计分法[4],当患者认知功能下降者判为 POCD^[5,6]。记录患者手术时间及麻醉时间和各麻醉药用量。

1.4 统计学处理

对文中所得数据输入到 SPSS18.0 统计软件中,计量资料采用 t 检验,计数资料采用 χ² 检验。当 P<0.05 为差异具有统计学意义。

2 结果

2.1 两组患者手术麻醉时间及麻醉剂用量

两组患者手术时间及麻醉时间、麻醉药用量均无统计学意义(P>0.05),见表 1。

表 1 两组患者临床手术麻醉时间及用药量比较

Table 1 Comparison of clinical anesthesia time and drug dosage between two groups

Category	Operation time(min)	Anesthesia time(min)	Midazolam(mg)	Atracurium(mg)	Sufentani(ug)
TIVA group	171±34	192±33	2.6±0.4	121±17	68±13
Intravenous anesthesia group	174±35	191±35	2.5±0.5	123±15	70±10

2.2 MMSE 认知功能评分

与术前 1 天比较,全凭静脉麻醉组、静脉复合麻醉组出麻醉恢复室时、术后 1 d 时 MMSE 评分降低(P<0.05);与术前 1 d 比较,两组在术后 3 天和 7 天时 MMSE 评分恢复正常(P>0.05),两组患者之间的 MMSE 认知功能评分在术前、术后均无统计学差异(P>0.05),见表 2。

2.3 两组患者 POCD 发生情况比较

出麻醉恢复室时,全凭静脉麻醉组发生 POCD24 例(39.34%),静脉复合麻醉组发生 25 例(40.32%),两组发生率比较无统计学差异(P>0.05);术后 1 天、3 天、7 天两组分别 POCD 的发生率比较均无统计学意义(P>0.05)。

3 讨论

术后认知功能障碍是老年患者术后较常见的神经系统并发症,但至今术后认知功能障碍的确切病因和发病机制仍未能

研究清楚,目前所有的研究基本上都围绕相关的影响因素进行。研究表明术后认知功能障碍患者中,大约有 10%~15% 的患者可进一步发展成老年痴呆,较之于认知功能正常的老年人仅为 1%~2% 的老年痴呆比例,具有显著性差异。因此,重视老年手术患者的麻醉方案的选择,对老年患者术后乃至更长远的预后都具有重要意义。因此不同老年手术患者麻醉方案对其术后认知功能有何影响,一直是临床麻醉工作者关注的问题。POCD 是老年病人术后较常见的神经系统麻醉并发症^[7,8],给患者及家庭带来了许多不便,目前 POCD 发生机制还不清楚,而全身麻醉药的使用可能会促进 POCD 的发生。要了解老年患者麻醉术后认知功能的变化,首先应选择合适的评价认知功能的方法,目前临床此类方法较多,但应用相对成熟的是 MMSE 量表^[9,10]。该评价方法具有操作简便,科学、客观的优点,尽可能地排除了人为地因素和患者本身情绪技巧智的干扰,尤其适合于对老年人进行认知功能评价^[11-13]。

表 2 两组患者 MMSE 认知功能评分

Table 2 Two groups of patients with MMSE cognitive function score

Project	1 day before surgery		Anesthesia recovery		After 1 days		After 3 days		After 7 days	
	TIVA group	Intravenous anesthesia group	TIVA group	Intravenous anesthesia group	TIVA group	Intravenous anesthesia group	TIVA group	Intravenous anesthesia group	TIVA group	Intravenous anesthesia group
Disorientation	8.2± 0.2	8.1± 0.1	7.8± 0.3	7.6± 0.4	7.4± 0.5	7.3± 0.6	8.3± 0.4	8.2± 0.5	8.4± 0.5	8.3± 0.6
Memory	2.8± 0.1	2.7± 0.2	2.3± 0.5	2.5± 0.4	2.3± 0.7	± 0.6	2.6± 0.2	2.6± 0.2	2.6± 0.4	2.7± 0.3
Attention and computing power	4.5± 0.2	4.8± 0.1	4.2± 0.3	4.1± 0.5	4.1± 0.4	4.0± 0.8	4.6± 0.4	4.7± 0.3	4.5± 0.3	4.4± 0.4
Ability to recall	2.9± 0.1	2.8± 0.1	2.4± 0.4	2.3± 0.5	2.5± 0.4	2.6± 0.3	2.8± 0.2	2.9± 0.1	2.8± 0.2	2.9± 0.1
Language skills	8.8± 0.2	8.8± 0.2	7.1± 0.9	7.3± 0.8	7.1± 1.2	6.9± 1.3	8.7± 0.2	8.8± 0.2	8.9± 0.1	8.8± 0.2
Total	27.2± 1.2	27.4± 1.3	23.8± 1.4 #	23.8± 1.3 #	23.4± 1.4 #	23± 1.5 #	27± 1.1	27.2± 1.2	27.2± 1.5	27.3± 1.4

Note: comparison with 1 day before surgery, P<0.05

表 3 两组患者 POCD 发生情况比较

Table 3 Comparison of POCD incidence in patients of two groups

Category	Case	Recovery	After 1 days	After 3 days	After 7 days
TIVA group	61	24(39.34%)	12(19.67%)	8(13.11%)	0(0)
Intravenous anesthesia group	62	25(40.32%)	11(17.74%)	8(12.90%)	1(1.6%)

本次研究中,我们采用 MMSE 量表对患者不同阶段的认知功能进行评价。术前不同麻醉方案的患者的认知功能评分不具有统计学意义,但术后麻醉恢复、术后 1 d、术后 3 d、术后 7 d 两组患者的认知功能评分均较术前比有降低,在出麻醉恢复室时、术后 1 d 时 MMSE 评分降低与术前 1 天相比,具有显著的统计学差异。同时两组患者术后均有出现 POCD,在发生率上比较,两组没有统计学意义。上述结果说明,麻醉确实能影响老年患者的认识功能,严重者会导致老年术后认知功能障碍(POCD)。

静脉复合麻醉和全凭静脉麻醉是较为常见的麻醉方法。是临床很多手术常选择的麻醉方案。但其是否会对老年患者的认知功能产生影响,目前尚无统一的定论^[14,15]。临床有资料证实,全身麻醉方法对老年患者的认知功能有影响,其术后发生 POCD 的几率较高,分析其可能的原因,可能与患者本身中枢神经系统出现的退行性病变增加了麻醉敏感度以及全麻药物对中枢神经系统产生抑制作用这两者密切相关^[16-18]。

本研究中为消除组间差异,在研究中严格控制患者年龄、受教育程度、术前用药、手术类型、麻醉药用量、低氧血症、血流动力学稳定、麻醉深度等可能影响术后认知功能的因素。两组间除静脉复合麻醉和全凭静脉麻醉不同外,其余因素均保持一致,两组组间结果的不同可以认为是这两种麻醉方式不同引起的^[19]。

尽管早期术后认知功能减退在老年患者中非常常见,并且对大多数患者是可逆的,但仍然有少数患者存在长期认知功能障碍。从本研究中发现,静脉复合麻醉和全凭静脉麻醉短时间的麻醉(<4 h)仅影响老年患者术后早期的认知功能,其对患者长期认知功能的影响,还有待于进一步研究。

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