

老年人在吸入全麻并硬膜外麻醉下上腹部手术期间血流动力学和氧耗变化

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摘要目的 探讨老年人在 N₂O-O₂-安氟醚吸入全麻复合硬膜外麻醉下上腹部手术期间血流动力学和氧耗的变化遥方法 28 例择期上腹部手术病人袁老年组和中年组各 14 例袁快速诱导气管插管后行机械通气袁吸入安氟醚和 N₂O 维持麻醉袁并间断硬膜外给药遥分别在诱导前尧切口前 1min 和手术开始后 30尧60尧80min 记录各项血流动力学和呼吸参数遥结果 插管后切口前两组的平均动脉压 MAP 冤和心率 HR 冤均非常显著地低于诱导前水平 (孕 0.01) 冤围术期两组的 MAP 和 HR 略有回升 冤仍非常显著地低于诱导前水平 冤孕 0.01 冤老年组 MAP 的降低幅度明显比中年组大遥手术开始后两组的氧耗量 冤 O₂ 冤均明显上升 (孕 0.01) 冤切口前 1min 袁老年组的上升幅度较中年组小遥结论 在吸入全麻复合硬膜外麻醉下上腹部手术期间袁老年组血流动力学的波动幅度较大 冤但其氧耗的上升速度和幅度较中年组小遥

关键词 老年人 全身麻醉 硬膜外麻醉 血流动力学 氧耗

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To study the changes in the hemodynamics and oxygen consumption in the elderly patients during upper abdominal surgery under epidural anesthesia combined with N₂O-O₂-enflurane inhalation. Twenty-eight patients with upper abdominal surgery on a selected day were divided into elderly group and middle-aged group, 14 subjects in each group. In the scheduled surgery, intratracheal intubation was performed after rapid anesthesia induction and mechanical ventilation was given. Anesthesia was maintained by using enflurane and N₂O inhalation and intermittent epidural anesthetic administration. Hemodynamic and respiratory parameters were recorded before anesthesia induction, 1 min before the incision and 30, 60, 80 min after the start of the operation, respectively. In both age groups, the mean arterial pressure (MAP) and heart rate (HR) underwent a marked decline during the period after anesthesia induction till 1 min before the incision was made (孕 0.01). Perioperative MAP and HR rebounded a little but still significantly lower than their pre-induction levels (孕 0.01). Patients in the elderly group showed greater amplitude of declination in perioperative MAP and HR than the middle-aged patients did. After the start of the surgery, oxygen consumption (VO₂) were elevated against the levels 1 min before the incision in both age groups, but the elevation in the elderly patients was comparatively moderate. During upper abdominal surgery under epidural anesthesia combined with inhalation anesthesia, the elderly patients may experience greater hemodynamic changes but less VO₂ increase than middle-aged patients.

Key words: aged; general anesthesia; epidural anesthesia; hemodynamics; oxygen consumption

目前对麻醉手术期间机体氧耗变化的研究并不多袁尤其对老年人麻醉手术期间氧耗变化的研究更未见报道遥本研究观察了在 N₂O-O₂-安氟醚吸入全麻复合硬膜外麻醉下上腹部手术期间老年人血流动力学和氧耗的变化袁并与中年人进行比较遥

1 资料和方法

1.1 临床资料

28 例 ASA Ⅱ~Ⅲ 级的择期上腹部手术病人袁根据年龄分为老年组和中年组遥老年组 14 例袁其中男 10

例袁女 4 例袁年龄 (66.9依 8.8) 岁袁体重 (55.4依 8.7) kg 遥中年组 14 例袁其中男 9 例袁女 5 例袁年龄 (48.9依 9.9) 岁袁体重 (59.1依 1.0) kg 遥手术类型包括胃大部切除尧胃癌根治及胆管切开取石等遥

1.2 麻醉方法

术前 30min 肌内注射安定 10mg 和阿托品 0.5 mg 遥入室后首先在 T₈₋₉ 间隙行硬膜外穿刺袁成功后头向置管 3 cm 遥硬膜外用药为 3:1 (灾灾 2% 利多卡因与 1% 丁卡因混合液) 袁根据病人对试验量 (3~5ml) 的反应确定术中硬膜外用药量遥依次静脉注射芬太尼 4.0 滋/kg 冤 b.w. 尧异丙酚 2.0mg/kg 冤 b.w. 尧琥珀酰胆碱 1.5 mg/kg 冤 b.w. 后气管插管袁用 Ohmeda Excel 210 麻醉机行机械通气 遥潮气量 8~10ml/kg 冤 b.w. 袁频率 12 次/min 袁吸呼比为 1:2 冤袁观察期间各项通气参数保持不

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醉期间血浆儿茶酚胺升高不显著。本研究结果表明,尽管采用了全麻复合硬膜外麻醉,但随着手术时间的延长,两组 VO_2 逐渐升高,其中以中年组 VO_2 的增加较老年组多,说明全麻复合硬膜外麻醉也不能完全消除上腹部手术时的应激反应。即使儿茶酚胺不升高,而与能量代谢相关激素的增加,也可使机体代谢率升高。这可能是由于硬膜外麻醉只能阻断脊神经根的交感神经,运动和运动神经,阻断手术切皮时的伤害性刺激向中枢传导,但硬膜外麻醉却不能阻断由迷走神经核发出支配腹腔脏器的迷走神经,因此硬膜外麻醉不能抑制手术进腹腔后牵拉痛导致的应激反应。

4 结论

在吸入全麻复合硬膜外麻醉下,上腹部手术期间老年病人血流动力学的波动幅度较大,但其氧耗的上升速度和幅度相对较中年病人小。

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