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硬膜外阻滞复合全麻与全凭静脉麻醉在宫颈癌手术中的效果比较*

陈芳¹ 钱敏¹ 纪金芬¹ 李霞² 陈蒋东^{1Δ}

(1 江苏省南京中医药大学附属张家港市中医医院麻醉科 江苏 苏州 215600;

2 江苏省南京中医药大学附属张家港市中医医院手术室 江苏 苏州 215600)

摘要 目的:对比硬膜外阻滞复合全麻与全凭静脉麻醉在宫颈癌手术中的效果。**方法:**选择2016年1月~2018年12月我院收治的90例宫颈癌患者,均采取腹腔镜宫颈癌根治术治疗,将其随机分为两组。对照组采用全凭静脉麻醉方法,观察组采用硬膜外阻滞复合全麻方法。比较两组的术后感染率、拔管时间以及苏醒时间,术前、术后12h和术后72h的血清肿瘤坏死因子- α (TNF- α)和白细胞介素-6(IL-6)水平、CD3⁺、CD4⁺/CD8⁺、CD8⁺、CD4⁺的变化。**结果:**观察组术后感染率、拔管时间以及苏醒时间均明显低于对照组($P<0.05$);观察组患者术后12h的血清TNF- α 以及IL-6水平明显低于术前和对照组($P<0.05$),两组术后72h的血清TNF- α 和IL-6水平均恢复至术前水平;两组术后12h的CD3⁺、CD4⁺/CD8⁺、CD4⁺均明显低于术前($P<0.05$),且观察组术后12h的CD3⁺、CD4⁺/CD8⁺、CD4⁺明显高于对照组($P<0.05$),两组术后72h的CD3⁺、CD4⁺/CD8⁺、CD8⁺、CD4⁺均恢复至术前水平。**结论:**与全凭静脉麻醉相比,硬膜外阻滞复合全麻更有助于宫颈癌手术患者早期拔管和苏醒,其可明显减轻患者术后的免疫抑制,有效降低术后感染发生率。

关键词:硬膜外阻滞复合全麻;全凭静脉麻醉;宫颈癌;术后感染;免疫功能

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Comparison of the effect of Epidural Block Combined with General Anesthesia and Total Intravenous Anesthesia on the Cervical Cancer Surgery*

CHEN Fang¹, QIAN Min¹, JI Jin-fen¹, LI Xia², CHEN Jiang-dong^{1Δ}

(1 Department of Anesthesiology, Zhangjiagang hospital of traditional Chinese medicine affiliated to nanjing university of traditional Chinese medicine, Suzhou, Jiangsu, 215600, China; 2 Operating Room, Zhangjiagang hospital of traditional Chinese medicine affiliated to nanjing university of traditional Chinese medicine, Suzhou, Jiangsu, 215600, China)

ABSTRACT Objective: To compare the effect of epidural block combined with general anesthesia and total intravenous anesthesia on the cervical cancer surgery. **Methods:** Selected 90 cases of patients with cervical cancer surgery who were treated in our hospital from January 2016 to December 2018, were selected and randomly divided into two groups randomly. The control group was given total intravenous anesthesia, while the observation group was given epidural anesthesia combined with general anesthesia. The postoperative infection rate, extubation time and recovery time, changes of the serum TNF- α and IL-6 levels, CD3⁺, CD4⁺/CD8⁺, CD8⁺ and CD4⁺ levels before surgery, at 12h and 72h after surgery, 72h surgery were compared between the two groups. **Results:** The infection rate, extubation time and recovery time in the observation group were significantly lower than those in the control group ($P < 0.05$). The serum TNF- α and IL-6 levels of cervical cancer patients in the observation group were significantly lower at 12 h after surgery than those before surgery and in the control group ($P < 0.05$). The serum TNF- α and IL-6 levels in both groups recovered to the preoperative levels at 72 h after surgery. The levels of CD3⁺, CD4⁺/CD8⁺, CD4⁺ in the two groups at 12h after operation were significantly lower than those before operation ($P < 0.05$). The levels of CD3⁺, CD4⁺/CD8⁺, CD4⁺ in the observation group at 12h after operation were significantly higher than those in the control group ($P < 0.05$). The levels of CD3⁺, CD4⁺/CD8⁺, CD4⁺ in both groups recovered to the preoperative levels at 72h after surgery. **Conclusion:** Compared with total intravenous anesthesia, epidural anesthesia combined with general anesthesia is more conducive to the early extubation and revive of cervical cancer patients, it significantly alleviates the postoperative immunosuppression and effectively reduces the incidence of postoperative infection.

Key words: Epidural block combined with general anesthesia; Total intravenous anesthesia; Cervical cancer; Postoperative infection; Immune function

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作者简介:陈芳(1989-),女,本科,住院医师,研究方向:麻醉学,电话:15162351285, E-mail: Chenfang_1805@163.com

Δ 通讯作者:陈蒋东(1983-),女,本科,主治医师,研究方向:临床麻醉,电话:13862209506, E-mail: Chenfang_1805@163.com

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前言

我国每年新增大约 13 万的宫颈癌患者,且有约 5 万例患者死于宫颈癌^[1]。宫颈癌早期的症状表现并不显著,大多患者在确诊时病情已发展至中晚期,治疗的难度极大。临床对于早期和中期宫颈癌患者主要予以手术疗法,随着微创理念与技术近几年获得的重视和普及,腹腔镜疗法的飞速改进,腹腔镜手术逐渐成为一种优先选择的术式^[2-3]。腹腔镜手术虽具有微创优势,但术中的牵拉以及人工气腹的建立等均会引发炎症反应和氧化应激反应,影响患者手术过程中呼吸循环以及血压的稳定性,甚至导致患者术后恢复困难。

麻醉方法的选择与宫颈癌手术患者的预后紧密相关^[6-8]。硬膜外阻滞复合全麻、全凭静脉麻醉均为临床上常用的麻醉手段。近年来,硬膜外阻滞复合全麻的应用逐渐增多,其可以减少术中全麻药物的使用剂量,促进患者尽早清醒和恢复呼吸,术后保留硬膜外导管镇痛,可以降低术后并发症发生率^[9,10]。本研究主要比较了硬膜外阻滞复合全麻与全凭静脉麻醉用于宫颈癌手术的效果,旨在为宫颈癌的临床治疗寻找有效且安全的麻醉方案。

1 资料与方法

1.1 一般资料

纳入我院 2016 年 1 月~2018 年 12 月收治的 90 例宫颈癌患者,纳入标准:TNM 分期: I a₁ 期~ II a₂ 期;择期开展腹腔镜手术疗法;对本项研究均知晓并签订了同意书。排除标准:有精神病史、患有神经系统疾病患者;合并凝血系统、神经系统和呼吸循环系统疾病患者。用抽签法将所有患者随机分为两组。观察组 45 例,年龄 43~82 岁,平均(59.73 ± 11.14)岁;TNM 分期: I a₁ 期者 31 例, I a₂ 期~ II a₂ 期者 14 例;体重 43~69 kg,平均(57.32 ± 4.53) kg;ASA 分级: I 级者 26 例, II 级者 19 例。对照组 45 例,年龄 44~81 岁,平均(58.42 ± 12.53)岁;TNM 分期: I a₁ 期者 30 例, I a₂ 期~ II a₂ 期者 15 例;体重 43~70 kg,平均(58.32 ± 3.79) kg;ASA 分级: I 级者 27 例, II 级者 18 例。两组的基线资料比较差异均无统计学意义($P>0.05$),具有可比性。

05),具有可比性。

1.2 麻醉方法

两组宫颈癌患者在入室术前 30 min,肌肉注射硫酸阿托品 0.5 mg,入室后均泵注右美托咪定 0.5~0.7 μg/kg,15 min 注完。监测患者的无创血压、血氧饱和度、心率和心电图等。麻醉诱导方法:静脉推注芬太尼 0.4~0.5 μg/kg、依托咪酯 0.3 mg/kg 以及顺式阿曲库铵 0.1 mg/kg。然后连接麻醉机对患者的呼吸进行控制,其中,潮气量设置为 7-8 mL/kg,呼吸频率设置为每分钟 13 次,新鲜气体设置为 40-50%氧浓度,流速为 2.0 L/min。观察组采用硬膜外阻滞复合全麻方法,指导宫颈癌病人保持右侧卧位,于机体胸椎 T_{9,10} 或者 T_{8,9} 部位进行穿刺和置管,注入 3 mL 的 2%利多卡因,放平患者,手术过程中维持呼出气体药物浓度为 0.7-0.8MAC 的七氟醚,麻醉药选用 0.5%利多卡因 +0.25%罗哌卡因 0.5 μg/kg 混合液,注入试验量 4 mL 后麻醉阻滞平面确切,根据情况再分次注入混合液。对照组采用全凭静脉麻醉方法,即靶控输注丙泊酚 3.0 μg/mL 和瑞芬太尼 2.5 ng/mL。

1.3 观察指标

① 比较两组的术后感染率、拔管时间以及苏醒时间。② 分别于术前、术后 12 h 和术后 72 h,采取 ELISA 法检测两组的血清 TNF-α 和 IL-6 水平,试剂盒均购自上海八通生物科技股份有限公司。③ 分别于术前、术后 12 h 和术后 72 h 检测两组的 CD3⁺、CD4⁺/CD8⁺、CD8⁺、CD4⁺。

1.4 统计学分析

采用 SPSS17.0 对数据进行统计学分析,计量资料组间对比采用 t 检验,计数资料组间比较采用 χ^2 检验,以 $P<0.05$ 为差异有统计学意义。

2 结果

2.1 两组术后感染率、拔管时间以及苏醒时间的比较

观察组术后感染率为 2.22%,拔管时间为(12.37 ± 1.45)min,苏醒时间为(8.49 ± 1.63)min,均明显低于对照组($P<0.05$),见表 2。

表 1 两组术后感染率、拔管时间以及苏醒时间的比较

Table 1 Comparison of the infection rate, extubation time and recovery time between the two groups

Groups	n	Infection rate [n (%)]	Extubation time ($\bar{x}\pm s$, min)	Recovery time($\bar{x}\pm s$, min)
Control group	45	6(13.33)	19.43 ± 2.78	14.32 ± 1.79
Observation group	45	1(2.22)*	12.37 ± 1.45*	8.49 ± 1.63*

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

2.2 两组术前、术后 12 h 和术后 72 h 的血清 TNF-α 和 IL-6 水平比较

两组术前的血清 TNF-α 和 IL-6 水平比较无明显的差异($P>0.05$),观察组宫颈癌手术患者在术后 12 h 的血清 TNF-α 以及血清 IL-6 水平明显低于术前和对照组($P<0.05$),两组术后 72 h 的血清 TNF-α 和 IL-6 水平均恢复至术前水平,见表 2。

2.3 两组术前、术后 12 h 和术后 72 h 的 CD3⁺、CD4⁺/CD8⁺、CD8⁺、CD4⁺ 的比较

两组术后 12 h 的 CD3⁺、CD4⁺/CD8⁺、CD4⁺ 均明显低于术前($P<0.05$),且观察组术后 12 h 的 CD3⁺、CD4⁺/CD8⁺、CD4⁺ 明显高于对照组($P<0.05$),两组术后 72 h 的 CD3⁺、CD4⁺/CD8⁺、CD4⁺ 均恢复至术前水平,见表 3。

3 讨论

宫颈癌是发生于宫颈管和子宫阴道部的恶性肿瘤^[11],其临床发病率高居所有女性生殖道恶性肿瘤中的首位^[12]。宫颈癌的

表 2 两组术前、术后 12 h 和术后 72 h 的血清 TNF- α 和 IL-6 水平比较($\bar{x}\pm s$, %)Table 2 Comparison of the serum levels of TNF-alpha and IL-6 before operation, at 12 hours and 72 hours after operation between the two groups($\bar{x}\pm s$, %)

Groups	n		TNF- α ($\mu\text{g/L}$)	IL-6 (ng/mL)
Control group	45	Before operation	41.73 \pm 4.26	67.32 \pm 5.16
		At 12 hours after operation	63.42 \pm 5.53 [#]	97.43 \pm 7.25 [#]
		At 72 hours after operation	42.36 \pm 3.78	66.52 \pm 5.43
Observation group	45	Before operation	41.52 \pm 3.97	66.93 \pm 5.42
		At 12 hours after operation	51.49 \pm 4.78* [#]	89.34 \pm 6.25* [#]
		At 72 hours after operation	41.24 \pm 3.92	65.43 \pm 5.27

Note: Compared with the control group, * $P<0.05$; compared with before operation, [#] $P<0.05$.表 3 两组术前、术后 12 h 和术后 72 h 的 CD3⁺、CD4⁺/CD8⁺、CD8⁺、CD4⁺ 比较($\bar{x}\pm s$, %)Table 3 Comparison of CD3⁺, CD4⁺/CD8⁺, CD8⁺, CD4⁺ before operation, at 12 hours and 72 hours after operation between the two groups ($\bar{x}\pm s$, %)

Groups	n		CD3 ⁺	CD4 ⁺ /CD8 ⁺	CD8 ⁺	CD4 ⁺
Control group	45	Before operation	68.13 \pm 3.92	1.24 \pm 0.33	31.27 \pm 3.45	39.25 \pm 4.13
		12 hours after operation	53.24 \pm 2.78 [#]	1.06 \pm 0.24 [#]	30.65 \pm 3.24	31.72 \pm 3.56 [#]
		72 hours after operation	68.32 \pm 3.54	1.23 \pm 0.34	30.92 \pm 2.76	38.97 \pm 4.23
Observation group	45	Before operation	68.74 \pm 3.65	1.25 \pm 0.31	31.69 \pm 3.28	39.27 \pm 4.26
		12 hours after operation	59.38 \pm 2.63* [#]	1.13 \pm 0.29* [#]	30.98 \pm 3.17	34.58 \pm 3.92* [#]
		72 hours after operation	68.19 \pm 3.22	1.24 \pm 0.32	31.27 \pm 3.64	38.24 \pm 3.65

Note: Compared with the control group, * $P<0.05$; compared with before operation, [#] $P<0.05$.

发病与初次性生活过早、性生活紊乱、多产、早年分娩、口服避孕药、吸烟、经济状况低下、地理以及种族因素相关。宫颈癌早期无显著的体征和症状,到晚期时会出现阴道排液量以及阴道流血量增多,波及到盆腔时会引发尿急、尿频和肛门坠胀等症状^[13-16]。腹腔镜宫颈癌根治术是临床上的主要采取的治疗手段,但其作为一种创伤性比较大的手术类型,手术时间比较长,手术操作会使患者出现强烈的应激反应^[17-20]。因此,必须采取有效的麻醉镇痛方法。若采用全凭静脉麻醉下开展手术,虽然可以完成手术,但是由于其无法抑制外周伤害性刺激的向上传导,会对手术的顺利进行和手术治疗效果造成影响。

硬膜外阻滞复合全麻不仅可以对大脑的皮质和边缘系统产生抑制作用,而且可以有效抑制外周伤害性刺激的向上传导,由于其能抑制阻滞范围内交感神经的节前纤维,可以使阻滞范围内的小静脉以及小动脉发生扩张,回心血量明显减少,外周血管阻力明显降低,肾上腺素的分泌水平明显降低,有助于使患者手术过程中的血流动力学维持稳定^[21-23]。麻醉相关感染的发生与麻醉方式、麻醉过程以及手术器具等有关。本研究结果显示观察组术后感染率、拔管时间以及苏醒时间均明显低于对照组,表明与全凭静脉麻醉相比,硬膜外阻滞复合全麻更有助于宫颈癌手术患者早期拔管和苏醒,明显降低术后感染发生率。分析其原因为全凭静脉麻醉后宫颈癌患者会丧失自主进行呼吸的能力,为了确保自身的机体获取充足的气体交换量,必须予以气管插管。而多项研究均显示给予气管插管实施麻醉患者的术后感染率要显著高于未进行气管插管的患者。究其原因可能的原因为气管插管会对患者呼吸黏膜和伤口咽部造成损伤,使患者机体的天然防御屏障受到破坏,使病原菌入侵

机体的机会大大增加。

TNF- α 由 T 淋巴细胞、巨噬细胞和 B 淋巴细胞生成,能引导多种炎症因子的产生,使机体的炎症反应加重^[24,25]。IL-6 水平的高低能反映机体的炎症反应程度^[26,27]。细胞免疫在患者手术后的感染预防和康复中发挥着极为重要的功能^[28,29]。T 淋巴细胞水平一旦产生比较大的波动变化,就会促使细胞免疫功能出现不同严重程度的紊乱。T 淋巴细胞所分泌的免疫因子包含 CD8⁺、CD4⁺ 和 CD3⁺ 等,当上述免疫因子的表达水平显著改变时,则提示细胞的免疫功能产生了紊乱,其对抗外界病原菌侵袭和感染的会被大大削弱^[30]。本研究中,观察组宫颈癌手术患者在术后 12 h 的血清 TNF- α 以及血清 IL-6 水平明显低于术前和对照组,两组术后 72 h 的血清 TNF- α 和 IL-6 水平均恢复至术前水平;观察组术后 12 h 的 CD3⁺、CD4⁺/CD8⁺、CD4⁺ 明显高于对照组。以上结果表明硬膜外阻滞复合全麻明显降低宫颈癌患者术后血清 TNF- α 和 IL-6 水平,减轻麻醉引发的免疫抑制,使术后感染发生率明显降低。

综上所述,与全凭静脉麻醉相比,硬膜外阻滞复合全麻更有助于宫颈癌手术患者早期拔管和苏醒,其可明显减轻患者术后的免疫抑制,有效降低术后感染发生率。

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