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右美托咪定和丙泊酚对髋部骨折手术患者术后镇静效果及谵妄的影响*

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摘要 目的:探讨右美托咪定和丙泊酚对髋部骨折手术患者术后镇静效果及谵妄改善效果的影响。**方法:**选取2016年4月-2018年3月于我院行髋部骨折手术的108例患者作为研究对象,按随机数字表法分为观察组(n=54)和对照组(n=54),两组患者术中均采用全身静脉麻醉,观察组患者给予右美托咪定进行镇静诱导,对照组患者给予丙泊酚进行镇静诱导。术后24h,采用Ramsay镇静评分评价两组患者术后的镇静效果,采用视觉模拟量表(VAS)评分评价术后镇痛效果,术后1周,对两组患者术后谵妄发生率、谵妄评定量表(CAM)评分、简易智能精神状态检查量表(MMSE)评分进行比较,记录不良反应发生情况。**结果:**术后24h,观察组患者的Ramsay镇静评分高于对照组,VAS评分及镇痛药追加量低于对照组,差异有统计学意义($P<0.05$)。术后1周,观察组患者谵妄发生率、CAM评分低于对照组,MMSE评分高于对照组,差异有统计意义($P<0.05$)。观察组不良反应发生率为9.26%,与对照组的14.81%比较,差异无统计学意义($P>0.05$)。**结论:**与丙泊酚相比,髋部骨折手术患者应用右美托咪定可获得更好的术后镇静、镇痛效果,能够降低谵妄的发生率,且无严重不良反应发生,有较高的临床应用价值。

关键词:髋部骨折;右美托咪定;丙泊酚;镇静效果;谵妄

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Effect of Dexmedetomidin and Propofol on Postoperative Sedative Effect and Delirium in Patients Undergoing Hip Fracture Surgery*

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ABSTRACT Objective: To observe the effect of dexmedetomidin and propofol on postoperative sedative effect and delirium in patients undergoing hip fracture surgery. **Methods:** 108 patients who underwent hip fracture surgery in our hospital from April 2016 to March 2018 were selected as the research object. The patients were divided into the observation group (n=54) and the control group (n=54) according to the random number table, total body intravenous anesthesia was used in the two group, the patients in the observation group were given sedation induced by dexmedetomidine, the patients in the control group were given sedation induced by propofol. 24h after operation, Ramsay sedation score was used to evaluate the sedative effect of the two groups after operation, the visual analogue scale (VAS) score was used to evaluate the effect of postoperative analgesia. 1 week after operation, the incidence of postoperative delirium, delirium Rating Scale (CAM) score, mini mental state examination scale (MMSE) score were compared between the two groups. The occurrence of adverse reactions was recorded. **Results:** 24h after operation, the Ramsay sedation score in the observation group was higher than that in the control group, and the VAS score and the dosage of analgesics were lower than those in the control group, the differences were statistically significant ($P<0.05$). 1 weeks after the operation, the incidence of delirium in the observation group and the CAM score were lower than those in the control group, and the MMSE score was higher than that of the control group, the differences were statistically significant ($P<0.05$). The incidence of adverse reactions in the observation group was 9.26%, compared with 14.81% of the control group, the difference was not statistically significant ($P>0.05$). **Conclusion:** Compared with propofol, dexmedetomidine can achieve better sedative, analgesic effects and reduce the incidence of delirium in patients with hip fracture surgery, there is no serious adverse reaction and high clinical value.

Key words: Hip fracture; Dexmedetomidin; Propofol; Sedative effect; Delirium

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前言

髋部骨折是临床上一种较为严重的骨骼损伤性疾病,好发

于老年群体。目前对于髋部骨折最为有效的治疗方式仍然是外科手术治疗,但是对于多数老年患者来说,由于认知功能的下降,患者在手术后易出现谵妄症状,具体表现为意识障碍、定向

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力障碍、注意力不集中等临床征象,根据临床报道显示髋部手术后患者出现谵妄的发生率高达 15%-30%,若不及时进行控制可引发颅内出血等不良结果,严重威胁患者的生命健康^[1,2]。另外,由于手术创伤引起的应激反应,患者在术后易出现躁动不安、剧烈疼痛的现象,对术后的康复进程造成不良影响^[3,4]。因此,在手术过程中采取有效的方式以降低患者术后谵妄、躁动等不适症状对于患者术后的康复有着重要意义。右美托咪定是一种新型的 α 肾上腺素受体激动剂,有较强的镇静镇痛效果,相关研究显示右美托咪定对患者的认知功能有一定改善效果,是一种高效的麻醉辅助药物^[5,6]。本研究对髋部手术患者在术中应用右美托咪定,并与常规镇静药物丙泊酚治疗效果进行对比,旨在探讨两种药物对髋部骨折患者术后的镇静效果及精神状态情况,现整理结果如下。

1 资料与方法

1.1 一般资料

选取 2016 年 4 月-2018 年 3 月于在我院行髋部骨折手术的 108 例患者作为研究对象,纳入标准:(1)均经 X 射线检查确诊为髋部骨折,并有手术治疗指征;(2)患者年龄 ≥ 18 周岁;(3)对术中所用药物无严重过敏反应及禁忌症者;(4)患者签署知情同意书。排除标准:(1)精神障碍者;(2)术前长期服用镇痛药物者;(3)合并严重心、肝、肾功能不全者和凝血障碍者。将所有患者按随机数字表法分为观察组($n=54$)和对照组($n=54$),其中观察组男 31 例、女 23 例;患者年龄 34-60 岁,平均(48.92 ± 8.36)岁;骨折部位:股骨颈骨折 19 例、股骨粗隆间骨折 23 例、骨盆骨折 12 例;美国麻醉医师协会(American Society of Anesthesiologists, ASA)分级为:I 级 28 例、II 级 20 例、III 级 6 例,对照组男 32 例、女 22 例;患者年龄 35-58 岁,平均(49.12 ± 8.57)岁;骨折部位:股骨颈骨折 20 例、股骨粗隆间骨折 24 例、骨盆骨折 10 例;ASA 分级为:I 级 30 例、II 级 17 例、III 级 7 例。两组患者一般资料比较无统计学差异($P>0.05$),均衡可比。我院伦理学委员已批准此次研究。

1.2 方法

两组患者术中均采用全身静脉麻醉,所有患者建立前臂静脉通路,采用 MP50 型监护仪(PHILIPS 公司)对手术患者的平均动脉压、心率、鼻温、脉搏、呼吸等各项体征指标进行监测,麻醉过程中采用 Aespire 型 Datex-Ohmeda 麻醉机进行操作,患者的麻醉诱导采用 0.05 mg/kg 的咪达唑仑(江苏恩华药业有限公司,国药准字:H20031037,规格:2 mL:10 mg)、3 μ g/kg 的枸橼酸芬太尼(宜昌人福药业有限责任公司,国药准字:H20003688,规格:10 mL:0.5 mg)、2 mg/kg 的丙泊酚(西安力邦

制药有限公司,国药准字:H19990282,规格:20 mL:200 mg)、0.15 mg/kg 的阿曲库铵(浙江仙琚制药股份有限公司,国药准字:H20090202,规格:5 mg)。然后对患者进行气管插管后行机械通气,氧气流量为 1.5 L/min,潮气量为 8-10 mL/kg。麻醉维持采用枸橼酸芬太尼 0.3 μ g/kg/h 和罗库溴铵(浙江仙琚制药股份有限公司,国药准字:H20093186,规格:5 mL:50 mg)0.3 mg/kg/h。观察组患者在手术结束前 30 min 采用静脉泵给予右美托咪定(江苏恒瑞医药有限公司,国药准字:H20090248,规格:2 mL:200 μ g),镇静诱导给药剂量为 1.0 μ g/kg/h,持续 15 min,维持剂量为 0.3-0.5 μ g/kg/h,直至手术结束。对照组患者则在手术结束前 30 min 采用静脉泵给予丙泊酚,镇静诱导给药量为 1 mg/kg/h,持续 15 min,维持剂量为 0.5-3.0 mg/kg/h,直至手术结束。术后患者采用静脉泵追加地佐辛(扬子江药业集团有限公司,国药准字:H20080329,规格:1 mL:5 mg)进行术后镇痛,给药量为 3 μ g/kg/h,当视觉模拟量表(visual analogue scale, VAS)评分 <4 分时即停止给予镇痛药物。

1.3 观察指标

采用 Ramsay 镇静评分、VAS 评分评价两组患者术后 24h 的镇静、镇痛效果,其中 Ramsay 镇静评分的分值范围为 1-6 分,得分越高表明患者的镇静效果越好,VAS 评分范围为 0-10 分,分值越高表明患者的疼痛感越强烈。比较两组患者术后镇痛药追加量。记录患者术后 1 周谵妄症状的发生率,当患者出现注意力不集中、意识障碍、思维混乱、定向力障碍中的任一项即可判断为谵妄。术后 1 周,采用谵妄评定量表(confusion assessment method, CAM)评分、简易智能精神状态检查量表(mini mental state examination, MMSE)评分评价两组患者谵妄症状严重程度及精神状态,其中 CAM 评分共 11 个条目,满分 44 分,得分越高表明患者谵妄症状越严重,MMSE 评分范围为 0-30 分,得分越高表明患者精神状态越好。记录不良反应情况。

1.4 统计学方法

采用 SPSS 21.0 进行统计分析,计数资料采用 χ^2 检验,计量资料采用 t 检验,分别以率和均数 $\pm$ 标准差表示,检验水准 $\alpha=0.05$ 。

2 结果

2.1 两组患者镇静、镇痛效果比较

术后 24h,与对照组比较,观察组患者的 Ramsay 镇静评分升高,VAS 评分及镇痛药追加量降低($P<0.05$)。见表 1。

2.2 两组患者谵妄发生率、症状严重程度及精神状态比较

术后 1 周,与对照组比较,观察组患者谵妄发生率、CAM 评分降低,MMSE 评分升高($P<0.05$)。见表 2。

表 1 两组患者镇静、镇痛效果比较($\bar{x} \pm s$)

Table 1 Comparison of sedative and analgesic effects between the two groups($\bar{x} \pm s$)

Groups	n	Ramsay sedation score(score)	VAS score(score)	Appending amount of analgesics(mg)
Observation group	54	2.89 $\pm$ 0.68	1.92 $\pm$ 0.41	0.38 $\pm$ 0.19
Control group	54	1.65 $\pm$ 0.46	3.76 $\pm$ 0.68	0.71 $\pm$ 0.29
t	-	11.099	17.028	6.995
P	-	0.000	0.000	0.000

表 2 两组患者谵妄发生率、CAM 评分、MMSE 评分比较

Table 2 Comparison of rate and score of delirium in two groups of patients

Groups	n	Incidence of delirium[n(%)]	CAM score(score)	MMSE score(score)
Observation group	54	3(5.56)	20.92± 2.39	28.14± 1.72
Control group	54	13(24.07)	24.38± 5.01	25.17± 2.24
t/ χ^2	-	7.337	4.580	7.806
P	-	0.001	0.000	0.000

2.3 两组不良反应情况评价

较,差异无统计学意义($P>0.05$)。见表 3。

观察组不良反应发生率为 9.26%,与对照组的 14.81%比

表 3 两组患者不良反应发生率比较[n(%)]

Table 3 Comparison of the incidence of adverse reactions in the two groups

Groups	n	Hypotension	Nausea and vomiting	Bradycardia	Dry mouth	Total incidence
Observation group	54	1(1.85)	1(1.85)	1(1.85)	2(3.70)	5(9.26)
Control group	54	3(5.56)	2(3.70)	1(1.85)	2(3.70)	8(14.81)
χ^2	-					0.787
P	-					0.375

3 讨论

手术过程的创伤会使患者术后出现一系列的应激反应,包括躁动不安、剧烈疼痛感等使患者术后出现不适,并影响术后的康复进程。更为严重的是,对于髋部骨折手术患者术后不仅有手术应激反应,还主要表现为术后的谵妄症状,主要出现在术后 1 周内,以老年患者居多^[7,9]。谵妄症状表现为意识障碍、定向力障碍、注意力不集中,此类症状若不及时控制还会造成呼吸道感染、静脉血栓、颅内出血等临床恶性事件,因此降低髋部骨折手术患者术后的谵妄发生率是髋部骨折收治疗中的重要组成部分^[10-12]。目前对于术后谵妄发生机制尚未完全明确,主流的一些观点认为谵妄的发生与患者术中麻醉药物的应用、手术过程中的脑部缺血、缺氧及术后感染、电解质紊乱及手术创伤所致的应激反应有关^[13-15]。因此,在患者手术进行过程中,采用合适的药物对于患者术后镇痛和镇静效果进行辅助调节,也可达到降低谵妄的发生率的目的。目前,在临床各项手术过程中常用的镇痛镇静药物主要有丙泊酚,近些年右美托咪定在手术过程中的辅助镇痛镇静的应用实例逐渐增多,引起了临床医师的普遍关注。

在本研究中,以髋部骨折手术患者为研究对象,通过分组评价对比右美托咪定和丙泊酚对患者术后镇静效果及谵妄发生率的影响。与对照组比较,观察组患者的 Ramsay 镇静评分升高,VAS 评分及镇痛药追加量降低,说明应用右美托咪定获得的镇静、镇痛效果要优于应用丙泊酚所取得的效果。丙泊酚是手术中常用的镇静剂,其与中枢神经系统的 GABA 受体结合,发挥镇痛镇静和催眠作用,具有起效快和不良反应少的应用特点^[16,17]。但临床应用显示,丙泊酚虽然有一定的镇静、镇痛作用,但是代谢也较快,因此术后需要不断追加镇痛药物,从而影响了患者术后的镇痛镇静效果的平稳发挥,另外多数的临床报道显示丙泊酚对术后患者的谵妄发生率的改善效果欠佳^[18]。

而右美托咪定是一种新型的麻醉辅助药物,为高选择性的 α_2 肾上腺素受体激动剂,通过激动中枢蓝斑核受体,降低交感神经活性,从而抑制去甲肾上腺素的释放,从而使患者进入拟睡眠状态,达到镇痛、镇静的效果^[19,21]。此外,观察组患者谵妄发生率、症状严重程度均较低,且精神状态优于对照组,说明右美托咪定可降低患者术后的谵妄发生率及不良精神状态。主要原因是右美托咪定通过对脑组织及神经系统的保护作用达到降低患者术后谵妄的发生率^[22,23]。首先,右美托咪定通过减少体内谷氨酸的浓度,缓解对脑部的损伤,有效保护了海马神经元^[24,25]。其次,右美托咪定可提高脑部组织的氧气供应,改善脑部的血流动力学,减少脑部的缺血缺氧现象的发生^[26,27]。再者,右美托咪定可阻断蛋白激酶 A 和下游产物的磷酸化作用,降低脑部伤害性神经递质的能量释放^[28]。而丙泊酚由于发挥镇静镇痛作用机制的不同,并不能显著的改善患者的术后谵妄的发生率。在不良反应发生率比较方面,观察组不良反应发生率为 9.26%,与对照组的 14.81%比较,差异无统计学意义($P>0.05$),说明两组患者不良反应发生率均较低,无严重不良反应出现,提示右美托咪定用药安全性良好。这是因为右美托咪定对受体作用的特异性较强,不会对其他受体产生附带作用,因而在用药过程中引发的不良反应较少^[29,30]。

综上所述,与丙泊酚相比,右美托咪定应用于髋部骨折手术患者的术后镇静效果更为显著,能够降低患者谵妄发生率,改善患者的精神状态,安全性较好。

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