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股神经阻滞麻醉联合局部浸润麻醉在老年髋关节置换手术中的应用 *

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摘要 目的：探究股神经阻滞麻醉联合伤口局部浸润麻醉对老年髋关节置换术后疼痛程度的影响。**方法：**选择 2016 年 1 月～2018 年 6 月我院收治的髋关节置换术的 85 例患者，据患者入院的编号的奇偶随机分为两组。对照组的 42 例采用伤口浸润麻醉方法，观察组的 43 例采用股神经阻滞麻醉联合伤口浸润麻醉方法。比较两组的麻醉效果、镇痛效果、术后阿片类药物的使用情况、住院时间及下床活动时间。**结果：**观察组感觉阻滞时间、恢复痛觉时间均显著长于对照组(P＜0.05)，术后 12 h 的视觉模拟评分法(Visual analog scales,VAS)评分较对照组明显降低(P<0.05)，但两组术后 6 h 和 1 d 的 VAS 评分无统计学差异(P>0.05)；观察组术后 1 d 的阿片类药物使用剂量较对照组明显降低(P<0.05)，但两组术后 2 d 的阿片类药物使用剂量比较无统计学差异(P>0.05)，观察组住院时间及下床活动时间较对照组明显缩短(P<0.05)。**结论：**股神经阻滞联合伤口浸润麻醉对于进行髋关节置换术的老年患者具有较好的镇痛效果，且在手术后阿片类镇痛药物的使用剂量减少，住院时间和下床活动时间均有所改善。

关键词：股神经阻滞；浸润麻醉；髋关节置换术；术后疼痛

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Application of Femoral Nerve Block Anesthesia Combined with Local Infiltration Anesthesia for the Elderly Patients with Hip Replacement Surgery*

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ABSTRACT Objective: To investigate the effect of femoral nerve block anesthesia combined with local infiltration anesthesia for the elderly patients with hip replacement surgery. **Methods:** Eighty-five patients who admitted to our hospital from January 2016 to June 2018 and underwent hip arthroplasty were randomly divided into the two groups according to the parity of the number. 42 patients in the control group underwent local infiltration anesthesia, and 43 patients in the observation group were treated with femoral nerve block anesthesia combined with local infiltration anesthesia. The anesthetic effect, analgesic effect, postoperative opioid use, hospital stay and time of getting out of bed were compared between tw groups. **Results:** The sensory block time and recovery pain time were significantly longer in the observation group than in the control group (P<0.05). The VAS scores was significantly lower in the observation group at 12 h after operation(P<0.05), but there was no significant difference between the two groups at 6 h and 1 d(P>0.05). The dose of opioids in the observation group was significantly lower than that in the control group at 1 day after operation (P<0.05), but there was no significant difference between the two groups at 2 day after operation (P>0.05). The time of hospital stay and the time of getting out of bed were significantly shorter than that of the control group (P<0.05). **Conclusion:** Femoral nerve block combined with local infiltration anesthesia has a good analgesic effect on the elderly patients undergoing hip replacement surgery, and the dose of opioid analgesics is reduced after surgery, the hospitalization time and time to get out of bed are improved.

Key words: Femoral nerve block; Infiltration anesthesia; Hip replacement; Postoperative pain

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前言

人工髋关节置换术是目前临床上常用的重建膝关节功能以及治疗膝部骨关节病的治疗手段[1-3],术后早期进行功能锻炼有助于改善人工关节的功能。但是术后大约有 30 %的患者会出呼吸中度疼痛,60 %的患者会出现剧烈疼痛。手术所采用的麻醉方法会对髋关节置换术的疗效及患者死亡产生重要的影响,术后早期采取优质、完善的镇痛治疗能明显提高人工髋关节置换术患者术后的康复训练效果[4-6]。老年患者因各器官的机能均出现不同程度的降低,且往往会合并多种基础疾病,其麻醉风险更高[7]。术后麻醉镇痛的手段比较多,最为简单的手段为静脉输注阿片类药物以及口服非甾体抗炎镇痛药,但阿片类药物极易引起恶心、尿潴留和呕吐等,会使消化道黏膜溃疡的发生风险大大增加,严重影响术后患者的生活质量[8-10]。近年来,随着现代科技的进步,很多新的麻醉方法被应用于治疗中。本研究主要探讨了股神经阻滞麻醉联合伤口浸润麻醉对老年髋关节置换术后疼痛程度的影响,结果报道如下。

1 资料与方法

1.1 一般资料

选取 2016 年 1 月 -2018 年 6 月在我院治疗的髋关节置换术的患者 85 例，首次进行单侧的髋关节置换治疗，年龄≥ 60 岁,无慢性疼痛史,均知情同意。排除标准:入组前已经有过髋关节置换术史者;合并严重的肿瘤者。根据患者入院的编号,采用奇偶法将患者随机分为两组,两组一般资料比较无统计学差异(P>0.05,表 1),具有可比性。

表 1 两组一般资料的对比

Table 1 Comparison of the general data between two groups

Groups	n	Male/female	Age(year old)	Average age(year old)	Body mass(kg)
Control group	42	26/16	60~83	66.59± 4.14	54.26± 5.14
Observation group	43	26/17	60~83	67.31± 4.59	55.12± 4.21

1.2 方法

术前先对患者的对患者心电图、血氧饱和度、电解质、心率等监测。根据体重静脉滴注给与 0.04 mg/kg 咪唑安定、1 mg/kg 异丙酚、0.5 μg/kg 舒芬太尼、0.1 mg/kg 维库溴铵进行麻醉诱导,气管插管后机械通气。静脉持续泵注 0.2 mg/kg 异丙酚、0.1 μg/kg 瑞芬太尼,间断静注 20 μg/kg 维库溴铵维持麻醉。在将手术切口关闭之前,对照组:采取 5 μg 舒芬太尼以及 1 %罗哌卡因对切口部位的皮肤进行浸润麻醉。观察组:首先对股神经进行定位:患者平卧,在患侧的耻骨和髂前上迹的中点。采用 Stimuplex2 DIC 神经针刺仪,电流定为 1 mA,频率为 2 Hz,并将其与穿刺针连接,注入 25 mL 0.375 %的罗哌卡因。待股神经阻滞起效之后,进行麻醉诱导,在将手术切口关闭之前,进行和对照组一致的浸润麻醉。

1.3 观察指标

(1)记录两组手术时间、感觉阻滞时间、恢复痛觉时间等麻醉指标。(2)使用视觉模拟评分(Visual analog scales,VAS)量表评估手术后 6 h、12 h 和 1 d 的疼痛程度。总分 10 分,分数越高表明疼痛程度越严重。(3)记录术后 1 d 和 2 d 的阿片类镇痛药物的使用剂量，每口服 100 mg 的曲马多相当于使用 10 mg 的阿片。(4)记录住院及下床活动时间。

1.4 统计学分析

数据选择 SPSS 22.0 进行统计学分析，计量数据组间比较行 t 检验,计数资料组间比较行 x^2 检验,以 P<0.05 表示差异具有统计学意义。

2 结果

2.1 两组麻醉效果的比较

观察组的感觉阻滞时间、恢复痛觉时间均长于对照组(P<0.05,表 2)。

表 2 两组麻醉效果的比较($\bar{x}$± s)

Table 2 Comparison of the anesthesia between two groups($\bar{x}$± s)

Groups	n	Operative time	Sensory block time	Pain recovery time
Control group	42	130.59± 19.23	80.53± 18.25	160.38± 20.59
Observation group	43	156.78± 20.34*	130.78± 37.54*	190.76± 25.77*

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

2.2 两组术后 VAS 评分比较

观察组髋关节置换术术后 12 h 的 VAS 评分较对照组显著降低(P<0.05),两组术后 6 h 和 1 d 的 VAS 评分比较无统计学差异(P>0.05,表 3)。

表 3 两组术后 VAS 评分的比较($\bar{x}$± s)

Table 3 Comparison of the postoperative VAS scores between two groups($\bar{x}$± s)

Groups	n	6 h	12 h	1 d
Control group	42	3.28± 0.48	6.56± 0.74	6.23± 0.78
Observation group	43	3.54± 0.56	5.19± 0.32*	6.14± 0.59

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

2.3 两组术后阿片类药物使用剂量比较

观察组髋关节置换术术后 1 d 的阿片类药物剂量较对照组显著降低(P<0.05),两组术后 2 d 的阿片类药物剂量比较无统计学差异(P>0.05,表 4)。

表 4 两组术后阿片类药物剂量的对比($\bar{x}\pm s$,mg)

Table 4 Comparison of the opioid dosage between two groups after operation($\bar{x}\pm s$, mg)

Groups	n	1 d	2 d
Control group	42	12.99± 0.59	14.59± 0.89
Observation group	43	9.59± 0.92*	14.78± 0.52

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

2.4 两组住院时间及下床活动时间比较

观察组的住院时间及下床活动时间较对照组显著缩短(P<0.05,表 5)。

表 5 两组住院时间及下床活动时间的对比($\bar{x}\pm s$)

Table 5 Comparison of the hospitalization time and out-of-bed activity time between two groups($\bar{x}\pm s$)

Groups	n	Length of stay (d)	Getting out of bed activity time (min)
Control group	42	7.24± 0.92	12.58± 1.62
Observation group	43	5.98± 0.25*	10.75± 0.62*

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

3 讨论

老年人髋关节置换术后疼痛产生的原因是组织受到损伤后使其周围中枢神经系统的敏感程度出现显著的改变,大量的炎症细胞因子会释放出多种的炎症介质,使损伤信号受体得以激活, 从而把损伤信号传导到机体的中枢系统而引发疼痛感[11-14]。而且,当组织受到损伤后,不但受损部位会对刺激的反应明显加强,其周围未受损部位对于普通的机械性刺激的反应也会随之明显加强,最终导致继发性的痛觉过敏[15-19]。有效的围术期镇痛手段能显著减轻应激反应,抑制伤害性刺激向中枢和外周神经系统传导,促进早期理疗以及活动,降低慢性疼痛的可能性症候发生率及心肺并发症[20-22]。但目前对于髋关节置换时的疼痛管理尚无完美的解决方案。

髋关节置换术后的疼痛管理方法多种多样,最为简单的手段是静脉输注吗啡类药物以及口服非甾体抗炎类镇痛药物,但是吗啡类药物极易引发恶心、尿潴留以及呕吐等不良反应,非甾体抗炎类镇痛药物会使消化道黏膜溃疡的发生危险大大增加。近年来,更多的新方法例如局部浸润麻醉、股骨神经阻滞等逐渐开始被应用于临床。与硬膜外阻滞麻醉相比,股骨神经阻滞麻醉的运动阻滞更小,副作用更小,操作更为简便[23-25]。随着麻醉技术的发展和对疼痛机制认识的深入,神经阻滞麻醉方法在临床中获得广泛的使用,尤其是椎管内麻醉禁忌的患者。但单纯使用易导致患者神经阻滞不全,对手术效果不利。

目前,结合超声进行神经阻滞得到了医师的重视,有望成为外周神经阻滞的金标准[26,27]。伤口浸润麻醉的药物配方中以局麻药物为主,最常使用的为罗哌卡因。研究表明 0. 2 %的罗哌卡因能达到最小的运动阻滞以及最佳的镇痛平衡[28-31]。与布比卡因相比,罗哌卡因的安全性更高,对心脏和中枢的毒性比较小,作用时间比较长,对机体心脏以及中枢所产生的毒性比较轻微,即使局部用药剂量升高至 400 mg 时的血药浓度,还远远低于中毒血药浓度[32-35]。本研究中,观察组手术时间、感觉阻滞时间和患者恢复痛觉时间均长于对照组, 术后 12 h 的 VAS 评分较对照组明显降低,表明股神经阻滞麻醉联合局部浸润麻醉在术后 12 h 的镇痛效果更优。两组术后 2 d 的阿片类药物使用无差异,表明两种方法在术后 2 d 后效果的减弱。在实际应用中,可以按照医院医疗条件的差异和患者的实际情况选择合适的镇痛方法,降低术中风险和副作用发生率,促进患者术后的早日康复。

总之, 股神经阻滞麻醉联合局部浸润麻醉对改善麻醉效果、髋关节置换术后的疼痛程度、术后阿片类镇痛药物的使用情况和住院时间及下床时间效果明显。本研究也存在一定的不足之处,如样本量比较少,后期随访和后续试验进行可能需要联合多家医院研究。

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