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右美托咪定联合经皮穴位电刺激对混合痔剥扎术后患者肠胃功能及术后疼痛的影响*

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摘要 目的:探讨右美托咪定联合经皮穴位电刺激对混合痔剥扎术后患者肠胃功能及术后疼痛的影响。**方法:**选择 2022 年 3 月-2022 年 7 月我院行混合痔剥扎术的患者 60 例,将 60 例患者随机分为对照组(30 例)与观察组(30 例),对照组患者给予右美托咪定镇痛,观察组给予术前经皮穴位电刺激,时间为手术开始前 2 min 至手术结束,右美托咪定使用方法、剂量同对照组。对比两组患者术前、术后 0.5 h、1 h、2 h、3 h 的疼痛评分,对比两组患者的术后疼痛疗效,对比两组创面愈合时间、腐肉完全脱落时间、住院时间及胃肠功能恢复情况,对比两组术前、术后的血管活性肠肽、胃动素及胃泌素水平。**结果:**术前及术后 3 h 时,两组的疼痛评分对比无统计学意义($P>0.05$);术后 0.5 h、1 h、2 h 时,观察组的疼痛评分明显较对照组低($P<0.05$)。观察组的术后疼痛有效率明显较对照组高, $P<0.05$ 。观察组的创面愈合时间、腐肉完全脱落时间及住院时间明显较对照组低($P<0.05$)。观察组的肠鸣音恢复时间、术后恶心呕吐发生率及排气时间明显较对照组短($P<0.05$)。术前,两组的血管活性肠肽、胃动素及胃泌素水平对比无统计学意义($P>0.05$);术后,两组血管活性肠肽、胃泌素水平升高,胃动素水平降低,且观察组变化幅度明显较对照组低($P<0.05$)。**结论:**右美托咪定联合经皮穴位电刺激可改善混合痔剥扎术后患者肠胃功能及术后疼痛情况。

关键词:右美托咪定;经皮穴位电刺激;混合痔剥扎术;胃肠功能;术后疼痛

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Effects of Dexmedetomidine Combined with Percutaneous Acupoint Electrical Stimulation on Gastrointestinal Function and Postoperative Pain in Patients with Mixed Hemorrhoid Stripping*

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ABSTRACT Objective: To investigate the effects of dexmedetomidine combined with percutaneous acupoint electrical stimulation on gastrointestinal function and postoperative pain of patients after mixed hemorrhoid stripping. **Methods:** 60 patients who underwent mixed hemorrhoidectomy in our hospital from March 2022 to July 2022 were selected, and 60 patients were randomly divided into Matched group (30 cases) and observation group (30 cases). The Matched group was given dexmedetomidine analgesia, and the observation group were given preoperative percutaneous acupoint electrical stimulation, 2min before the operation to the end of the operation. The method and dose of dexmedetomidine were the same as Matched group. The pain scores of patients in two groups were compared before and after 0.5 h, 1 h, 2 h and 3 h, the postoperative pain efficacy of patients in two groups were compared, the wound healing time, the time of rotting flesh completely shedding, the length of hospital stay and the recovery of gastrointestinal function of the two groups were compared, and the levels of vasoactive intestinal peptide, motilin and gastrin in the two groups were compared before and after surgery. **Results:** There were no difference in pain scores in two groups before and 3 h after surgery ($P>0.05$); after surgery for 0.5 h, 1 h and 2 h, the pain score of the observation group was lower than that of the matched group ($P<0.05$). The effective rate of postoperative pain in the observation group was higher than the matched group ($P<0.05$). Compared with Matched group, the wound healing time, carrion shedding time and hospital stay time of the observation group were lower ($P<0.05$). The recovery time of bowel sounds, incidence of postoperative nausea and vomiting and exhaust time in the observation group were shorter than those in the matched group ($P<0.05$). Before surgery, there was no difference in the levels of vasoactive intestinal peptide, motilin and gastrin in two groups ($P>0.05$). After surgery, the levels of vasoactive intestinal peptide and gastrin in both groups increased, while the levels of motilin decreased, and the range of change in observation group was lower than that in matched group ($P<0.05$). **Conclusion:** Dexmedetomidine combined with percutaneous acupoint electrical stimulation can improve gastrointestinal function and postoperative pain in patients with mixed hemorrhoid dissection.

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Key words: Dexmedetomidine; Percutaneous acupoint electrical stimulation; Mixed hemorrhoid stripping; Gastrointestinal function; Postoperative pain

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前言

肛肠科的一种常见病、多发病是痔疮^[1],2015年中华中医药学会发布的流行病学调查研究显示,我国成人肛肠疾病的发病率已达50.1%,远超糖尿病、高血压等疾病^[2]。痔的治疗重点是消除临床症状,一般我国人群多“携痔”的就医习惯,使得部分来院就诊的患者多数已经拖了很多年,此时的疾病病情仅有部分病例可通过非手术进行治疗,多数患者需通过手术治疗^[3]。因肛肠位置特殊,肛肠周围的神经、组织丰富,术后容易出现渗水、疼痛、水肿情况,其均会延长患者的创面愈合时间;其中混合痔患者术后出现的疼痛问题是肛肠科医师的一个难题^[4,5];此外手术本身具有一定的创伤性,会对手术时的局部组织产生不同程度的刺激、损伤,抑制胃肠功能,使得患者采用术后的胃肠功能在较长时间后方可恢复,因为为了缩短混合痔剥扎术患者术后的康复时间,需改善其术后肠胃功能及疼痛^[6]。右美托咪定是一种特异性的 α_2 肾上腺素激动剂,其可抑制外周、中枢神经的活性,具有术后镇痛的作用^[7,8]。经皮穴位电刺激是一种微创技术,其通过机体的穴位表皮,使用电极片导入脉冲电流,从而起到穴位刺激的作用^[9,10],我院将二者联合应用于行混合痔剥扎术的患者中,分析其对混合痔剥扎术后患者肠胃功能及术后疼痛的影响,以为缩短混合痔剥扎术后康复时间选择有效的方法提供依据。

1 资料与方法

1.1 病例资料

选择2022年3月-2022年7月我院行混合痔剥扎术的患者60例。

纳入标准:所有患者使用中华中医药学会肛肠病专业委员会、中华医学会外科学分会结直肠肛门外科学组、中国中西医结合学会结直肠肛门病专业委员会讨论的痔临床诊治指南(2006年)中关于混合痔的诊断标准^[11]:内痔是因肛垫的血管、支持结构、动静脉温和支持出现异常移位或病理性改变引起的;外痔是因直肠下静脉在齿线下段表皮下静脉丛出现血栓或病理性扩张引起的;混合痔有内痔及外痔的特征,内痔通过对应部位外痔静脉丛与丰富静脉丛温和支持融合形成,在严重时会出现环状痔脱出;患者均对本研究知情同意。

排除标准:不符合肛肠手术的临床禁忌症及真正适应症;既往存在精神病史、慢性疼痛史、药物滥用史者;存在直肠、结肠、肛管等器质性疾病者、伴有肛周脓肿、肛瘘等会对术后疗效产生影响的疾病、存在严重的肝肾等严重疾病者、处于哺乳期、妊娠期的女性者、对穴位经皮刺激恐惧不能配合者等。

由计算机生成随机的列表,待分组后用不透光信封进行密封,之后随机抽取,信封抽取人员与随机列表编制人员不参加疗效评价与判断。将60例患者随机分为对照组(30例)与观察组(30例),对照组中男性者11例,女性者19例,年龄分布在

28~75岁,平均 (45.45 ± 4.56) 岁,病程1~9年,平均 (4.32 ± 0.89) 年;观察组中男性者12例,女性者18例,年龄分布在22~72岁,平均 (43.99 ± 4.21) 岁,病程0.5~7年,平均 (4.34 ± 0.85) 年,两组的性别、年龄、病程等资料对比无统计学意义($P > 0.05$)。本研究符合医学伦理。

1.2 治疗方法

入院后,两组患者均行常规治疗,常规行术前检查,患者在入院后第二天进行手术治疗,术前行500 mL 0.1~0.2%肥皂水进行灌肠。两组的麻醉分级均为I~II级。

对照组患者入室后行心电图、血压、脉搏、血氧饱和度等监测,给予患者1%盐酸罗哌卡因3 mL进行局部麻醉,给予0.5%布比卡因10 mg进行腰麻。患者在手术开始至手术结束时泵注右美托咪定,剂量为 $0.5 \mu\text{g}/\text{kg}\cdot\text{h}$ 。

观察组麻醉方法同对照组,而观察组在手术开始前2 min给予经皮穴位电刺激,取穴为上髎、次髎、神门、内关,取穴均为双侧取穴,刺激频率设置为30 Hz,刺激强度以患者可以最大耐受为准,患者的经皮穴位电刺激时间为手术开始前2 min至手术结束。术后两组患者均进入至麻醉后监测的治疗室,患者完全清醒自主呼吸恢复后可送回病房。

1.3 观察指标

(1)使用视觉模拟评分法评估对比两组患者术前、术后0.5 h、1 h、2 h、3 h的疼痛评分;

(2)对比两组患者的术后疼痛疗效,术后患者的创面偶有轻微疼痛或完全不痛,在换药、排便时有轻微疼痛或无疼痛为显效;术后患者的创面稍微疼痛感,换药、排便时有一定的疼痛感,而疼痛不需处理可以缓解为有效;术后患者的创面有一定的疼痛感,换药、排便时疼痛更多,需要使用阿片类药物或服用解热镇痛药才能止痛为无效;

(3)对比两组创面愈合时间、腐肉完全脱落时间、住院时间;

(4)对比两组的胃肠功能恢复情况,包括肠鸣音恢复时间、术后恶心呕吐发生率及排气时间;

(5)两组在术前及术后1 d均取2 mL血液,使用M240172放射免疫分析仪检测对比两组术前、术后的血管活性肠肽、胃动素及胃泌素水平。

1.4 统计学方法

SPSS23.0软件,计数资料用频数表示,卡方检验分析,计量资料用 $\bar{x} \pm s$ 表示,独立、配对t检验、单因素方差分析对比, $P < 0.05$ 为差异有统计学意义。

2 结果

2.1 对比两组患者术前、术后0.5 h、1 h、2 h、3 h的疼痛评分

术前及术后3 h时,两组的疼痛评分对比无统计学意义($P > 0.05$);术后0.5 h、1 h、2 h时,观察组的疼痛评分较对照组低($P < 0.05$)。

表 1 对比两组患者术前、术后 0.5 h、1 h、2h、3 h 的疼痛评分($\bar{x} \pm s$, 分)

Table 1 The pain scores of the two groups were compared at 0.5 h, 1 h, 2 h and 3 h before and after surgery($\bar{x} \pm s$, score)

Groups	n	Preoperative	Postoperative for 0.5 h	Postoperative for 1 h	Postoperative for 2 h	Postoperative for 3 h	F	P
Observation group	30	7.67± 1.20	4.41± 0.76	2.21± 0.45	1.65± 0.35	3.21± 0.64	311.249	<0.001
Matched group	30	7.71± 1.24	5.40± 0.85	4.51± 0.67	3.35± 0.78	3.32± 0.67	131.321	<0.001
t	-	-0.127	-4.756	-15.609	-9.756	-0.650		
P	-	0.899	<0.001	<0.001	<0.001	0.518		

2.2 对比两组患者的术后疼痛疗效

观察组的术后疼痛有效率明显较对照组高($P<0.05$)。

表 2 对比两组患者的术后疼痛疗效(n/%)

Table 2 The postoperative pain efficacy of the two groups was compared(n/%)

Groups	n	Curative effect	Effective	Invalid	Effective percentage
Observation group	30	24	5	1	29(96.67)
Matched group	30	19	5	6	24(80.00)
χ^2	-				4.043
P	-				0.044

2.3 对比两组创面愈合时间、腐肉完全脱落时间及住院时间

显著较对照组低($P<0.05$)。

观察组的创面愈合时间、腐肉完全脱落时间及住院时间明

表 3 对比两组创面愈合时间、腐肉完全脱落时间及住院时间($\bar{x} \pm s$)

Table 3 The wound healing time, carrion completely fallen off time and length time($\bar{x} \pm s$)

Groups	n	Wound healing time(h)	Carrion completely fallen off time(h)	Length time(d)
Observation group	30	23.72± 2.20	4.40± 0.69	2.45± 0.67
Matched group	30	26.99± 2.34	5.10± 0.89	3.98± 0.72
t	-	-5.576	-3.405	-8.521
P	-	<0.001	<0.001	<0.001

2.4 对比两组的胃肠功能恢复情况

间明显较对照组短($P<0.05$)。

观察组的肠鸣音恢复时间、术后恶心呕吐发生率及排气时

表 4 对比两组的胃肠功能恢复情况($\bar{x} \pm s$, h)

Table 4 The recovery of gastrointestinal function was compared between the two groups($\bar{x} \pm s$, h)

Groups	n	Bowel sound recovery time	Incidence of postoperative nausea and vomiting	Exhaust time
Observation group	30	12.34± 2.34	1(3.33)	37.78± 4.15
Matched group	30	15.89± 3.45	6(20.22)	52.89± 5.67
χ^2/t	-	-4.664	4.403	-11.788
P	-	<0.001	0.044	<0.001

2.5 对比两组术前、术后的血管活性肠肽、胃动素及胃泌素水平

术前,两组的血管活性肠肽、胃动素及胃泌素水平对比无统计学意义($P>0.05$);术后,两组血管活性肠肽、胃泌素水平升高,胃动素水平降低,且观察组变化幅度明显较对照组低($P<0.05$)。

3 讨论

混合痔外剥扎术患者术后常会出现疼痛,其受多种因素影响^[12], (1)解剖因素,肛管齿线下组织受到脊神经的支配,此外神经末梢的神经分布十分广泛,因此对痛觉更加敏感,而一定的疼痛刺激会使得肛门括约肌出现痉挛的情况,引起肛门局部

表 5 对比两组术前、术后的血管活性肠肽、胃动素及胃泌素水平($\bar{x} \pm s$, pg/mL)Table 5 The comparison of vasoactive intestinal peptide, gastric dynamic element and gastric secrete element in two groups($\bar{x} \pm s$, pg/mL)

Groups	30	Vasoactive intestinal peptide		Gastric dynamic element		Gastric secrete element	
		Preoperative	Postoperative	Preoperative	Postoperative	Preoperative	Postoperative
Observation group	30	124.78± 23.89	195.45± 30.23*	188.34± 18.89	130.41± 27.89*	44.34± 5.82	139.78± 21.34*
Matched group	30	125.10± 24.56	223.89± 39.80*	189.78± 23.45	158.67± 34.56*	45.01± 6.23	153.89± 28.89*
t	-	-0.051	-3.117	-0.262	-3.485	-0.430	-2.152
P	-	0.959	0.003	0.794	0.001	0.669	0.036

Note: Compared with preoperative, * $P < 0.05$.

出现血液循环障碍,进一步引起肛门出现局部血液循环障碍,使得局部组织缺氧、缺血,刺激疼痛加重,从而形成恶性循环^[13];(2)手术因素:手术时过多在局部注射麻醉药物,使得药物累积于局部组织及皮下,对局部的血液循环产生影响,出现肛门局部水肿,进一步引起疼痛;同时手术时肛门括约肌松弛不足,手术区域较高,使得手术视野的暴露不足,局部组织容易收到夹持及牵拉,因不必要的组织损伤引起疼痛;内痔在结扎时其结扎部位较低,会对肛管的皮肤组织产生波及,从而形成一定的切割作用,引起疼痛;在进行切口缝合时,其张力较大,从而切割肛门部皮肤,对皮下组织产生牵拉、挤压、压迫作用,出现术后疼痛;术前患者的肛管压力较高,括约肌张力较高,术中未处理,导致肛管持续高压,从而引起肛门静脉、直肠下静脉、淋巴回流障碍出现局部的疼痛、水肿,而疼痛、水肿又会加剧循环障碍,加重术后的疼痛情况^[14];(3)术后因素:痔疮的手术切口为一种污染的切口,若患者便次较多、排便过早会对切口产生反复刺激作用,加重了局部的炎症反应,从而引起患者机体疼痛,若患者在术后排便困难,用力过猛,会使得切口血管出现破裂,在其局部出现血栓而出现一定的疼痛情况^[15];(4)术后患者的肛门水肿,因手术对淋巴循环系统、局部血液系统产生损伤,使得其回流受到一定的阻碍,增加了血管内的渗透压,使得水分从血管中渗出,在组织间隙中产生滞留,从而引起了组织水肿,释放了内源性的致病因子,对肛周神经产生刺激作用,引起疼痛^[16];(5)术后换药对伤口产生刺激作用,因换药人员不仔细,会直接刺激手术切口创面,加重患者的恐惧心理^[17]。

术后疼痛会引起机体病理、生理的变化,对机体多个系统产生影响,对患者术后康复产生影响,首先会影响患者心血管系统,术后疼痛刺激会导致机体释放醛固酮、儿茶酚胺、血管紧张素、抗利尿激素等内源性物质,刺激机体的水钠潴留,从而增加心血管负担,也会增加外周伤害感受末梢敏感,使患者处于疼痛-儿茶酚胺分泌增加-疼痛的循环中;再次其会降低患者的机体淋巴细胞,使机体免疫系统处于抑制状态,降低了其对病原体的抵抗力,增加了术后并发症的发生^[18,19];再次术后疼痛会引起交感神经系统兴奋,降低平滑肌张力,增高括约肌张力,增加了患者术后出现恶心、腹胀、呕吐等消化系统并发症,因此临床医师建议在术前、术后对痔术引起的疼痛进行治疗^[20,21]。术后镇痛可降低患者手术后痛苦,也可降低围术期并发症,减轻、消除患者不适与痛苦,对促进患者的术后康复有重要意义^[22,23]。临床上常用右美托咪定对混合痔外剥扎术后疼痛进行镇痛治疗。近年来,随着经皮穴位电刺激再临床上的深入研究,

其已广泛应用于临床中,而目前其在混合痔外剥扎术中的研究较少,因此本文分析了右美托咪定联合经皮穴位电刺激对混合痔剥扎术后镇痛的影响。

术前,两组的血管活性肠肽、胃动素及胃泌素水平对比无统计学意义,术后,两组血管活性肠肽、胃泌素水平升高,胃动素水平降低,且观察组变化幅度明显较对照组低,观察组的肠鸣音恢复时间、术后恶心呕吐发生率及排气时间明显较对照组短,观察组的创面愈合时间、腐肉完全脱落时间及住院时间明显较对照组低,表明与单独使用右美托咪定相比,右美托咪定联合经皮穴位电刺激会降低手术对混合痔外剥扎术患者的胃肠刺激。本研究结果与 Li WJ 等研究结果类似^[24]。其中血管活性肠肽是一种抑制性的胃肠激素,当其水平升高时会对胃肠蠕动产生抑制作用,从而形成胃肠障碍;胃泌素是由 G 细胞分泌而来,其会对胰液、胃酸分泌产生促进作用,从而引起近端的胃舒张,其水平升高时,会加重患者的疾病病情发展;胃动素是小肠中的 Mo 细胞分泌而来,其可对胃动素受体产生影响,其水平降低时,会加重患者的疾病病情发展;以上三种指标共同作用于胃肠道间,水平异常时会引起胃肠功能紊乱,从而加重患者的胃肠功能紊乱^[25-27]。主要是由于经皮穴位电刺激相应穴位时,可改善患者的小肠蠕动功能,从而促进了术后胃肠功能的恢复,缩短了患者的术后康复时间,其改善胃肠功能可能是由于对血管活性肠肽、胃动素产生抑制作用,对胃泌素产生促进作用引起的。

本文结果表明,术前及术后 3 h 时,两组的疼痛评分对比无统计学意义,术后 0.5 h、1 h、2 h 时,观察组的疼痛评分明显较对照组低,观察组的术后疼痛有效率明显较对照组高,表明在右美托咪定基础上加用经皮穴位电刺激可改善混合痔外剥扎术后疼痛。本文结果与 Lu Z 等研究相似^[28],术前给予穴位治疗,降低了乳腺癌患者术后 6 个月慢性疼痛。主要是由于右美托咪定可作用于患者的中枢神经系统,对肾上腺素释放产生抑制作用,降低交感神经活性,从而起到镇痛作用;而经皮穴位电刺激选取了上髎、次髎、神门、内关穴位,其中内关为手厥阴心包,神门是心经穴,刺激以上两个穴位具有安神止痛的作用;其可通过改善患者的心功能,使得心主神、主血脉功能达到平衡,从而起到镇痛作用,上髎、次髎取穴具有疏通局部的气血,疏散患者的局部邪气,让局部筋肉得到营养;此外经皮穴位电刺激通过特定的脉冲电流对机体穴位产生刺激作用,可促进内源性阿片肽释放,从而起到了镇痛的作用,增强了术后镇痛的作用^[29,30]。

综上所述,右美托咪定联合经皮穴位电刺激可改善混合痔

剥扎术后患者肠胃功能及术后疼痛情况。

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