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早期下床活动联合髋部周围肌肉抗阻训练对老年全髋关节置换术后患者髋关节功能和生活质量的影响 *

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摘要 目的:观察早期下床活动联合髋部周围肌肉抗阻训练对老年全髋关节置换术(THA)后患者髋关节功能和生活质量的影响。**方法:**选取我院2018年2月~2020年8月期间收治的老年THA患者83例。使用随机数字表法将患者分为对照组和联合组,例数分别为41例和42例,分别接受早期下床活动、早期下床活动联合髋部周围肌肉抗阻训练干预,对比两组睡眠质量、疼痛情况、生活自理能力、术后多个时点的髋关节功能评分、生活质量,并观察两组并发症发生情况。**结果:**两组干预后匹兹堡睡眠质量指数(PSQI)、视觉模拟评分法(VAS)评分较干预前下降,Barthel指数(BI)评分较干预前升高,且联合组的变化程度大于对照组($P<0.05$)。两组术后1个月、3个月、6个月、12个月Harris人工髋关节功能评分逐渐升高,且联合组高于对照组($P<0.05$)。两组干预后心理功能、物质生活状态、社会功能、躯体功能评分较干预前升高,且联合组的变化程度大于对照组($P<0.05$)。两组并发症发生率组间对比无统计学差异($P>0.05$)。**结论:**早期下床活动联合髋部周围肌肉抗阻训练可促进老年THA后患者髋关节功能恢复,减轻患者术后疼痛,改善睡眠质量,进而提高患者的生活质量,预防相关并发症的发生,改善预后。

关键词:老年;全髋关节置换术;早期下床活动;髋部周围肌肉抗阻训练;生活质量;髋关节功能

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Effects of Early Out of Bed Activities Combined with Resistance Training of Hip Muscles Around on Hip Function and Quality of Life in Elderly Patients after Total Hip Arthroplasty*

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ABSTRACT Objective: To observe the effect of early out of bed activities combined with resistance training of hip muscles around on hip function and quality of life in elderly patients after total hip arthroplasty (THA). **Methods:** 83 elderly patients with THA who were received in our hospital from February 2018 to August 2020 were selected. Using a random number table method divided the patients into control group and the combined group, the number of cases of 41 and 42, respectively, they were respectively, received early out of bed activities, early out of bed activities combined with resistance training of hip muscles around intervention. The sleep quality, pain situation, self-care ability, hip function scores at multiple postoperative points and quality of life of the two groups were compared, the complications of the two groups were observed. **Results:** After intervention, the Pittsburgh sleep quality index (PSQI) and visual analogue scale (VAS) scores of the two groups decreased compared with before intervention, and the Barthel index(BI) rating scale score increased compared with before intervention, and the change degree of the combined group was greater than that of the control group ($P<0.05$). The Harris artificial hip function score of the two groups increased gradually at 1 month, 3 months, 6 months and 12 months after operation, and the combined group was higher than the control group ($P<0.05$). After intervention, the scores of psychological function, material life status, social function and physical function in the two groups were higher than those before intervention, and the changes in the combined group were greater than those in the control group ($P<0.05$). There was no significant difference in the incidence of complications between the two groups ($P>0.05$). **Conclusion:** Early out of bed activities combined with resistance training of hip muscles around the hip can promote the recovery of hip function in elderly patients after THA, relieve postoperative pain, improve sleep quality, improve the quality of life of patients, prevent the occurrence of related complications, and improve the prognosis.

Key words: Elderly; Total hip arthroplasty; Early out of bed activities; Resistance training of muscles around hip; Quality of life; Hip function

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前言

髋关节是机体负重关节的重要关节之一,随着社会老龄化进程的不断推进,老年股骨颈骨折患者日益增多,全髋关节置换术(THA)是临床治疗老年股骨颈骨折患者的有效手术方法,手术时间短,术中出血少,可有效有效缓解患者疼痛,降低并发症发生风险^[1-3]。同时,术后督促患者早期下床活动可增加老年THA后患者关节活动度,增强肌力,保持关节稳定,促进患者术后恢复,但仍有部分患者无法获益^[4]。随着快速康复理念的兴起,临床工作者们发现髋部周围肌肉抗阻训练对患者的关节功能恢复和手术效果的影响较为明显^[5]。基于此,本研究通过对我院收治的老年THA后患者给予早期下床活动联合髋部周围肌肉抗阻训练干预,取得了较好的效果。

1 资料与方法

1.1 基线资料

本研究获得我院伦理学委员会批准。选取我院2018年2月~2020年8月期间收治的老年THA患者($n=83$)。入选的患者采用随机数字表法分组,分为对照组41例,采用早期下床活动;联合组42例,采用早期下床活动联合髋部周围肌肉抗阻训练干预。对照组中女性17例,男性24例,年龄范围60~78岁,平均年龄(70.45 ± 2.37)岁。联合组中女性16例,男性26例,年龄范围62~79岁,平均年龄(70.98 ± 2.51)岁。两组基线资料比较无差异($P>0.05$),具有均衡可比性。

1.2 纳入、排除标准

纳入标准:(1)因创伤导致股骨颈骨折行THA患者;(2)均符合手术指征;(3)年龄 ≥ 60 岁;(4)患者或其家属对本研究知情同意并签署知情同意书;(5)手术均由同一组经验丰富的医师开展。排除标准:(1)凝血功能障碍患者;(2)合并心、肝、肾等重要脏器功能障碍者;(3)严重脑血管意外、肿瘤、精神异常等不能配合锻炼者;(4)合并营养不良者;(5)有髋部手术经历。

1.3 方法

手术方式为THA,采用标准后外侧入路。手术结束后均给予术后密切观察体征、维持患肢外展中立位、预防压疮、术后饮食干预等常规干预。对照组接受早期下床活动,分为3个阶段。第一阶段(术后1~2 d):指导患者进行主动训练,训练方式包括

踝关节跖屈背伸运动、臀肌收缩运动、股四头肌训练、髋部肌力等。第二阶段(术后3~4 d):指导患者进行直腿抬高运动、抬臀运动。第三阶段(术后5~7 d):指导患者坐位、坐位平衡、站立、站立平衡、步行等练习。早期床边运动施行过程中注意患者耐受度,从最小量、最简单的运动开始,如有不适,可立即停止。联合组患者在对照组患者干预基础上接受髋部周围肌肉抗阻训练,术后3~7d开始进行,术侧小腿上绑缚一重约1 kg沙袋,进行髋屈/髋后伸/髋外展/髋内收等肌群的活动训练,1组动作作为每个方向10~15次,2组/d,持续至术后3个月。

1.4 观察指标

(1)采用匹兹堡睡眠质量指数(PSQI)^[6]、视觉模拟评分法(VAS)^[7]、Barthel指数(BI)^[8]评估两组患者干预前后的睡眠质量、疼痛情况、生活自理能力。PSQI总分21分,分数越高,睡眠质量越差。VAS评分范围为0~10分,0分为无痛,10分为剧烈疼痛。BI总分为0~100分,分数越高,患者生活自理能力越强。(2)出院时、术后1个月、术后3个月、术后6个月、术后12个月运用Harris人工髋关节功能评分^[9]量表进行评分,该量表包括髋关节畸形、髋关节活动度、功能性活动、疼痛这4项,总分100分,分数越高,髋关节功能越好。(3)干预前后使用生活质量综合评定量表(GQOLI-74)^[10]评价患者生活质量,其中GQOLI-74包括物质生活状态、社会功能、心理功能、躯体功能四个项目,100分/每个项目,分数越高患者生活质量越好。(4)观察两组患者术后并发症发生情况。

1.5 统计学方法

应用SPSS20.0统计软件进行统计分析。GQOLI-74、PSQI、Harris人工髋关节功能评分等计量资料以均数 $\pm$ 标准差($\bar{x} \pm s$)表示,采用t检验。并发症发生率、性别比例等计数资料采用率表示,行卡方检验,检验水准为 $\alpha=0.05$ 。

2 结果

2.1 VAS、PSQI、BI评分对比

两组干预前PSQI、VAS、BI评分对比均无统计学差异($P>0.05$)。两组干预后PSQI、VAS评分较干预前下降,BI评分较干预前升高,且联合组的变化程度大于对照组($P<0.05$),见表1。

表1 PSQI、VAS、BI评分对比($\bar{x} \pm s$,分)

Table 1 Comparison of scores of PSQI, VAS and BI($\bar{x} \pm s$, scores)

Groups	Time	PSQI	VAS	BI
Control group($n=41$)	Before intervention	13.79 $\pm$ 1.52	5.19 $\pm$ 0.67	51.47 $\pm$ 6.32
	After intervention	8.84 $\pm$ 0.94	2.26 $\pm$ 0.59	76.52 $\pm$ 5.37
	t	17.735	21.015	-19.341
	P	0.000	0.000	0.000
Combined group($n=42$)	Before intervention	13.94 $\pm$ 1.45	5.23 $\pm$ 0.54	50.89 $\pm$ 7.09
	After intervention	5.67 $\pm$ 0.79*	1.43 $\pm$ 0.38*	86.04 $\pm$ 8.13*
	t	32.458	37.296	-21.117
	P	0.000	0.000	0.000

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

2.2 Harris 人工髋关节功能评分对比

两组出院时 Harris 人工髋关节功能评分对比无差异($P>0.04$)。

两组术后 1 个月、3 个月、6 个月、12 个月 Harris 人工髋关节功能评分均逐渐升高,且联合组较对照组高($P<0.05$),见表 2。

表 2 Harris 人工髋关节功能评分对比($\bar{x}\pm s$,分)

Table 2 Comparison of Harris artificial hip function scores($\bar{x}\pm s$, scores)

Groups	Discharge	1 months after operation	3 months after operation	6 months after operation	12 months after operation
Control group(n=41)	52.18± 5.42	60.53± 6.09*	65.82± 7.98* [#]	72.26± 7.41* ^{#%}	78.28± 5.62* ^{#%@}
Combined group(n=42)	52.47± 6.01	68.74± 6.12*	77.28± 6.63* [#]	82.03± 6.79* ^{#%}	90.97± 6.17* ^{#%@}
t	-0.231	-6.125	-7.123	-6.265	-9.879
P	0.808	0.000	0.000	0.000	0.000

Note: compared with discharge, * $P<0.05$. Compared with 1 month after operation, [#] $P<0.05$. Compared with 3 months after operation, [%] $P<0.05$. Compared with 6 months after operation, [@] $P<0.05$.

2.3 GQOLI-74 评分对比

两组干预前 GQOLI-74 评分对比无差异($P>0.05$)。两组干

预后心理功能、物质生活状态、社会功能、躯体功能评分较干预前升高,且联合组的变化程度大于对照组($P<0.05$),见表 3。

表 3 GQOLI-74 评分对比($\bar{x}\pm s$,分)

Table 3 Comparison of GQOLI-74 scores($\bar{x}\pm s$, scores)

Groups	Time	Psychological function	Material life status	Social function	Physical function
Control group(n=41)	Before intervention	53.81± 8.79	59.65± 6.23	59.27± 5.25	52.24± 6.24
	After intervention	72.77± 6.62	75.72± 6.35	77.63± 6.17	70.85± 5.88
t		-11.033	-11.567	-14.511	-13.898
P		0.000	0.000	0.000	0.000
Combined group (n=42)	Before intervention	53.53± 6.34	59.17± 6.72	59.06± 6.28	52.97± 4.02
	After intervention	81.26± 7.61*	84.94± 7.48*	88.37± 5.36*	82.86± 5.14*
t		-17.926	-16.140	-22.731	-29.330
P		0.000	0.000	0.000	0.000

Note: compared with the control group after intervention, * $P<0.05$.

2.4 两组并发症发生率对比

两组并发症发生率组间对比无差异($P>0.05$),其中感染、

贫血均给予对症支持治疗,其余未予以处理,可于 1~3 d 左右自行消失。见表 4。

表 4 两组并发症发生率对比[n(%)]

Table 4 Comparison of complication rates between the two groups [n(%)]

Groups	Infected	Anemia	Pressure injury	Constipation	Pain	Total incidence rate
Control group(n=41)	1(2.44)	1(2.44)	1(2.44)	2(4.88)	1(2.44)	6(14.63)
Combined group(n=42)	0(0.00)	1(2.38)	0(0.00)	1(2.38)	1(2.38)	3(7.14)
χ^2						1.204
P						0.272

3 讨论

THA 现已成为股骨颈骨折患者的有效治疗方案,其技术发展日趋成熟^[11]。而 THA 的成功实施除了依赖于精湛的手术技巧外,还有赖于术后早期的康复训练模式^[12]。既往不少报道表明^[13,14],THA 后患者术后进行康复训练,可有效改善人工关

节的活动范围,改善患者预后。尤其是对于老年 THA 患者,此阶段的患者机体代谢速度慢、手术耐受度差,术后恢复难度大、康复效果差异明显^[15]。

以往的研究认为^[16],THA 后患者早期下床活动可行度较高。早期下床活动是在术后第 1d 即开始进行康复训练,主要分为肌力训练、髋关节活动范围训练及后期步态训练^[17]。通过进

行股四头肌训练、臀肌收缩运动、踝关节跖屈背伸运动、髋部肌力等主动训练,可减少后期干预强度增大时假体松动的危险,有利于维持髋关节稳定性^[18]。同时早期下床活动干预可通过抬臀运动、直腿抬高运动等方式扩大关节活动范围^[19]。此外,下床站立、离床活动等步态训练方式可促进患者下肢肌力恢复^[20]。但由于本次研究以老年 THA 患者为着重观察对象,发现老年患者身体机能衰退较为严重,患髋肌力较差,部分患者甚至伴有不同程度的肌力萎缩^[21]。因此,不少患者仅仅是接受早期床边运动疗法,无法显著改善下肢肌群肌力,达不到理想的恢复效果^[22]。加上国内老年 THA 患者因疾病知识了解不深刻、家属督促不到位等多种原因,往往难以坚持整个训练过程^[23]。近年来,抗阻训练在治疗偏瘫、慢性心力衰竭以及 THA 后中均有应用。俞小红等^[24]学者的报道证实抗阻训练可改善骨骼肌功能,增加肌力和耐力。本次研究观察早期下床活动的基础上结合髋部周围肌肉抗阻训练应用于老年 THA 后患者的效果,结果显示,两种康复方式联合干预可改善患者髋关节功能。THA 后,关节制动不足,关节疏松结缔组织会转变为致密结缔组织,关节功能恢复缓慢^[25]。而髋部周围肌肉抗阻训练通过逐步增加关节活动度,增加活动量,防止关节粘连,有效改善髋关节功能^[26]。另 THA 作为大型外科手术,术后疼痛难以避免,加上术后需长期制动引起的活动障碍;以上因素均可使患者易产生负性情绪,长此以往影响患者生活质量^[27,28]。本次研究还发现,早期下床活动联合髋部周围肌肉抗阻训练可减轻老年 THA 后患者术后疼痛,提高睡眠质量,进而提高患者的生活质量。可能是因为早期下床活动联合髋部周围肌肉抗阻训练可以有效提高康复效果,增强行走能力,使患者尽快回归正常生活^[29,30]。观察两组并发症发现,联合组的并发症发生率低于对照组,但组间对比无差异,可见髋部周围肌肉抗阻训练联合早期下床活动具有降低老年 THA 后患者并发症发生率的潜能,但具体的改善价值还有待进一步的大样本量论证分析。

综上所述,早期下床活动联合髋部周围肌肉抗阻训练可促进老年 THA 后患者髋关节功能恢复,减轻患者术后疼痛,改善睡眠质量,进而提高患者的生活质量,预防相关并发症的发生,改善预后。本研究的不足之处在于,未能设置更多的评估时间点,难以确切了解术后多长时间抗阻训练可以体现出两组的差异,有待后续的进一步深入研究。

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