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盆底肌功能训练联合阴茎夹对前列腺增生术后患者尿失禁的临床应用分析*

李雪艳[1] 章宗武[2] 李令勋[1△] 李昱灿[1] 许 芳[1] 关艳声[1]

（1 安徽省第二人民医院泌尿外科 安徽 合肥 230041；2 安徽医学高等专科学校外科教研室 安徽 合肥 230601）

摘要 目的：分析盆底肌功能训练联合阴茎夹对前列腺增生术后患者尿失禁的临床应用效果。**方法：**选取我院 2017 年 4 月~2019 年 4 月收治的 72 例前列腺增生术后尿失禁患者，随机分为对照组和观察组各 36 例，两组均予盆底肌功能训练，观察组加用阴茎夹控制排尿。对比两组术后尿失禁改善情况、排尿改善情况、国际尿失禁咨询委员会尿失禁问卷表简表（ICI-Q-SF）评分变化、压力性尿失禁分度评价及经济费用情况。**结果：**两组干预后 20 d、干预后 30 d、干预后 90 d 尿失禁发生率均较干预后 10 d 下降，观察组干预后 10 d、干预后 20 d、干预后 30 d、干预后 90 d 尿失禁发生率均低于对照组，差异均有统计学意义（$P<0.05$）。两组干预后 90 d 每日总尿量较干预前升高，每日总排尿次数、每日总漏尿次数均较干预前下降；观察组干预后 90 d 每日总尿量高于对照组，每日总排尿次数、每日总漏尿次数均低于对照组，差异均有统计学意义（$P<0.05$）。两组干预后 90d ICI-Q-SF 评分均较干预前下降，且观察组干预后 90d ICI-Q-SF 评分低于对照组，差异均有统计学意义（$P<0.05$）。观察组患者干预后压力性尿失禁临床治愈率高于对照组，差异有统计学意义（$P<0.05$）。两组患者压力性尿失禁分度情况比较差异无统计学意义（$P>0.05$）。观察组阴茎夹使用费用为（70.26±8.51）元，低于对照组的（388.71±26.44）元，差异有统计学意义（$P<0.05$）。**结论：**在盆底肌功能训练的基础上联合阴茎夹能够有效改善前列腺增生术后患者尿失禁症状及生活质量，且有助于降低患者经济负担，值得临床推广应用。

关键词：盆底肌功能训练；阴茎夹；前列腺增生；尿失禁；生活质量

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Clinical Application of Pelvic Floor Muscle Function Training Combined with Penile Clamp in the Treatment of Urinary Incontinence after Prostatectomy*

LI Xue-yan[1], ZHANG Zong-wu[2], LI Ling-xun[1△], LI Chan-can[1], XU Fang[1], GUAN Yan-sheng[1]

(1 Department of Urology Surgery, Second People's Hospital of Anhui Province, Hefei, Anhui, 230041, China;

2 Teaching and Research Office of Surgery, Anhui Medical College, Hefei, Anhui, 230601, China)

ABSTRACT Objective: To analyze the clinical effect of pelvic floor muscle function training combined with penile clamp in the treatment of urinary incontinence after prostatectomy. **Methods:** From April 2017 to April 2019, 72 patients with urinary incontinence after prostatectomy in our hospital were randomly divided into control group and observation group with 36 cases in each group. Both groups were given pelvic floor muscle function training, and the observation group was added with penile clamp to control urination.The improvement of urinary incontinence, the improvement of micturition, the change of ICI-Q-SF score, the grading evaluation of stress urinary incontinence and the economic cost were compared between the two groups. **Results:** The incidence of urinary incontinence in the observation group was lower than that in the control group ($P<0.05$). 90 d after intervention, the total daily urine volume in the two groups was higher than that before intervention, and the total times of urinations per day and total times of leakage of urine per day were lower than that before intervention; the total daily urine volume in the observation group was higher than that in the control group, and the the total times of urinations per day and total times of leakage of urine per day were lower than that in the control group 90d after intervention,with statistical significance ($P<0.05$). The ICI-Q-SF score 90 d after intervention in the two groups was lower than that before intervention,and the ICI-Q-SF score 90d after intervention in the observation group was lower than that in the control group, the difference was statistically significant ($P<0.05$). The clinical cure rate of stress urinary incontinence in the observation group was higher than that in the control group ($P<0.05$), and there was no significant difference in the stress urinary incontinence grade between the two groups ($P>0.05$). The cost of penile clamp in the observation group was (70.26±8.51) yuan, lower than that (388.71±26.44)yuan in the control group,the difference was statistically significant ($P<0.05$). **Conclusion:** On the basis of pelvic floor muscle function training, combined with penile clamp can effectively improve the symptoms of urinary incontinence and quality of life of patients after

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作者简介：李雪艳（1978-），女，硕士研究生，研究方向：泌尿外科，E-mail：13856057422@139.com

△ 通讯作者：李令勋（1969-），博士，主任医师，研究方向：泌尿外科，E-mail：1135087511@qq.com

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prostatectomy, and help to reduce the economic burden of patients, which is worthy of clinical application.

Key words: Pelvic floor muscle function training; Penile clamp; Prostatic hyperplasia; Urinary incontinence; Quality of life

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前言

良性前列腺增生是中老年男性常见病、高发病；流行病学调查显示，50 岁男性良性前列腺增生发病率达 40%，80 岁以上的老年男性前列腺增生发病率达 90%[1-3]。约有 25%的前列腺增生患者因尿路梗阻或合并尿潴留、膀胱结石、肾积水等并发症，需接受手术治疗，但患者术后尿失禁发生率普遍较高[4-6]。尿失禁的发生不仅会影响患者正常生理功能，还可引发自卑、失落、消极等心理状态变化，降低患者生活质量[7,8]。因此，控制并改善尿失禁症状也是保证手术效果的关键环节。既往临床常以盆底肌功能训练，效果尚可[9,10]。近年来，阴茎夹在改善原位膀胱术后尿失禁患者中的积极作用也已得到研究证实[11]。基于既往研究结论，此次研究就盆底肌功能训练与阴茎夹联合应用于前列腺增生术后尿失禁的效果进行了分析，望为临床尿失禁患者的干预提供新的思路，现报道如下。

1 资料与方法

1.1 一般资料

将 2017 年 4 月至 2019 年 4 月我院收治的 72 例前列腺增生术后尿失禁患者纳入此次前瞻性研究。选取标准：(1)明确良性前列腺增生诊断，符合外科手术指征，接受前列腺电切术治疗；(2)术后发生尿失禁，即在拔除导尿管后的不同时间里在未能到达厕所或不能自我控制排尿而有不同程度的尿液漏出；(3)患者对此次研究知情同意，能够配合盆底肌功能训练及阴茎夹使用。排除标准：(1)合并神经源性膀胱、下尿道外伤史伴膀胱出口梗阻；(2)合并严重心肺病变；(3)术前已有尿失禁。使用随机数字法将患者随机分为对照组和观察组各 36 例，对照组年龄 55~79 岁，平均(61.28±5.44)岁，病程 1 周 ~1 个月，平均(11.24±2.35)d；观察组年龄 51~83 岁，平均(61.59±5.26)岁，病程 1 周 ~1 个月，平均(12.06±2.44)d。两组患者年龄和病程比较不存在统计学差异(P>0.05)，具有可比性，且本临床研究获得了我院医学伦理委员会授权批准开展实施。

1.2 干预方案

盆底肌功能训练：两组均行盆底肌功能训练。根据患者自身意愿，选择站立位、坐位或平卧位，放松下肢、腹部、臀部肌肉，收紧并上提耻骨、骨尾周围肌肉，行盆底肌自主收缩、肌肉控制训练，维持 10 s 后放松 10 s，为 1 组。单次训练循环 30 组，每日训练 3 次，30 d 为 1 周期，持续训练 3 个周期。若患者无法掌握训练方法或技巧，则嘱其取侧卧位，戴医用一次性手套并取石蜡油涂于手指，嘱患者放松，缓慢将手指插入肛门，逐步指导患者按上述动作训练，直至患者自觉肛门有明显紧缩感。阴茎夹：对照组常规使用纸尿裤应对尿失禁，观察组给予阴茎夹，在住院期间由患者家属到医疗器械公司自行购买阴茎夹，由医护人员共同指导患者以阴茎夹夹住阴茎根部，定时开放阴茎夹(一般建议每 2 h 开放 1 次)，每次打开阴茎夹排尿后休息 5~10 min，而后重新夹上阴茎夹，以避免阴茎水肿等并发症。

1.3 观察指标

对比两组术后尿失禁改善情况、排尿改善情况、国际尿失禁咨询委员会尿失禁问卷表简表(ICI-Q-SF)评分变化、压力性尿失禁分度评价及经济费用情况。① 尿失禁改善情况即干预后 10d、干预后 20d、干预后 30d、干预后 90d 尿失禁发生率(进行电话随访)；② 排尿改善情况即干预前、干预后 90 d 每日总排尿量、总排尿次数、总漏尿次数。③ ICI-Q-SF 评分于干预前、干预后 90 d 进行评估，该量表包括漏尿次数、漏尿量、漏尿对日常生活的影响共 3 个维度，分值 0~21 分，得分越高则尿失禁症状越严重[12]。④ 压力性尿失禁分度评价[13]：采用压力性尿失禁标准于干预后 90 d 进行评估。共分为 3 个度，轻度(仅在咳嗽、喷嚏、大笑等腹压增加情况下发生尿失禁)；中度(在屏气、用力、日常活动时或直立、起身站立时发生尿失禁)；重度(平躺时发生尿失禁)；在便秘、咳嗽等腹压增加情况下也无尿液渗出视为临床治愈。⑤ 记录两组患者干预后 90 d 内尿失禁物理控制方案的经济费用，即阴茎夹使用费用和纸尿裤使用费用。

1.4 统计学分析

采用 SPSS18.0 软件进行数据分析，数据的计数资料用(n/%)表示，分析方法采用卡方检验，数据符合正态分布的采用($\bar{x}\pm s$)描述。针对方差齐性的样本，用独立样本 T 检验分析，否则采用校正 T 检验处理，等级资料采用秩和检验，以 P<0.05 为差异有统计学意义。

2 结果

2.1 两组患者干预前后尿失禁改善情况

两组干预后 20 d、干预后 30 d、干预后 90 d 尿失禁发生率均较干预后 10 d 下降，观察组干预后 10 d、干预后 20 d、干预后 30 d、干预后 90 d 尿失禁发生率均低于对照组，差异均有统计学意义(P<0.05)。见表 1。

2.2 两组患者排尿改善情况比较

两组干预后 90 d 每日总尿量较干预前升高，每日总排尿次数、每日总漏尿次数均较干预前下降；观察组干预后 90 d 每日总尿量高于对照组，每日总排尿次数、每日总漏尿次数均低于对照组，差异均有统计学意义(P<0.05)。见表 2。

2.3 两组患者干预前后 ICI-Q-SF 评分比较

两组干预后 90d ICI-Q-SF 评分均较干预前下降，且观察组干预后 90d ICI-Q-SF 评分低于对照组，差异均有统计学意义(P<0.05)。见表 3。

2.4 两组患者干预后压力性尿失禁分度情况比较

观察组患者干预后压力性尿失禁临床治愈率高于对照组，差异有统计学意义(P<0.05)。两组患者压力性尿失禁分度情况比较差异无统计学意义(P>0.05)。见表 4。

2.5 两组患者经济费用比较

观察组阴茎夹使用费用为(70.26±8.51)元，低于对照组的

(388.71±26.44)元,差异有统计学意义(T=-68.790,*P*=0.000)。

表 1 两组患者干预前后尿失禁发生率比较[n(%)]

Table 1 Comparison of incidence of urinary incontinence between the two groups before and after intervention [n (%)]

Groups	n	10d after intervention	20d after intervention	30d after intervention	90d after intervention
Control group	36	30(83.33)	21(58.33)*	14(38.89)*	10(27.78)*
Observation group	36	19(52.78)	11(30.56)*	6(16.67)*	3(8.33)*
χ^2 value	-	7.730	5.625	4.431	4.600
P value	-	0.005	0.018	0.035	0.032

Note: Compared with 10d after intervention,*$P<0.05$.

表 2 两组患者排尿改善情况比较($\bar{x}\pm s$)

Table 2 Comparison of improvement of micturition between the two groups($\bar{x}\pm s$)

Groups	Time	Total daily urine volume (mL)	Total times of urinations per day(time)	Total times of leakage of urine per day(time)
Control group(n=36)	Before intervention	1025.77±158.42	16.59±2.38	18.41±2.26
	90d after intervention	1339.46±210.59*	11.42±2.01*	13.15±2.10*
Observation group(n=36)	Before intervention	998.64±160.89	16.84±2.60	18.23±1.99
	90d after intervention	1915.40±257.83*#	8.51±1.75*#	6.41±0.59*#

Note: Compared with before intervention, *$P<0.05$; Compared withControl group, #$P<0.05$.

表 3 两组患者干预前后 ICI-Q-SF 评分比较(分,$x\pm s$)

Table 3 Comparison of ICI-Q-SF scores between the two groups before and after intervention(score, $x\pm s$)

Groups	n	Before intervention	90d after intervention	*T* value	*P* value
Control group	36	13.91±2.59	10.26±2.24	6.155	0.000
Observation group	36	14.04±2.33	8.15±1.93	-11.681	0.000
T value	-	-0.223	-4.069	-	-
P value	-	0.412	0.000	-	-

表 4 两组患者干预后尿失禁分度情况比较[n(%)]

Table 4 Comparison of stress urinary incontinence grade between the two groups [n (%)]

Groups	n	Clinical cure	Stress urinary incontinence grade		
			Mild	Moderate	Severe
Control group	36	33(91.67)	3(8.33)	0(0.00)	0(0.00)
Observation group	36	26(72.22)	8(22.22)	1(2.78)	1(2.78)
χ^2/U value	-	4.741		0.043	
P value	-	0.029		2.379	

3 讨论

目前临床对患者术后尿失禁发生的机制尚无明确解释,多数研究认为,术后膀胱功能障碍、膀胱颈纤维化、尿道狭窄及外括约肌损伤,在尿失禁的发生发展中扮演了重要角色[14-16]。尿失禁的发生不仅会影响手术效果,还可导致患者心理负担增加,甚至引发湿疹、失禁性皮炎等并发症,威胁患者生活质量。因此,及时缓解患者尿失禁症状,对于改善患者预后质量至关重要[17,18]。男性正常排尿过程需借助膀胱的稳定性和顺应性,膀胱的这两大特性的保障需要借助膀胱颈和前列腺尿道附近的四部分肌肉,即侧括约肌、尿道平滑肌、尿道旁纹肌、尿道外括约肌,然而当患者进行了前列腺电切术后对膀胱或者临近的测括约肌造成了一定的损伤,因此患者对排尿过程的控制会造成不同程度的影响,患者排尿过程仅仅只通过外括约肌来进行控制,那么患者在大概率上会出现尿失禁的现象[19,20]。往常的临床研究中,针对前列腺增生术后尿失禁的病情常采用常采取盆底肌功能训练的方法来进行,通过对盆底肌的锻炼,患者可以在一定程度上提高盆底肌肉的收缩性和张力,从而提高对尿道和膀胱的支撑作用,对促进患者尿道括约肌在短期内恢复张力具有一定的效果,可预防患者术后出现尿失禁的现象[21-23]。同时,随着尿道括约肌收缩力的改善,患者膀胱顺应性亦可有效恢复,从而延长排尿间隔时长[24-26]。

本研究对照组接受盆底肌功能训练，其干预后 90 d 尿失禁发生率降至 27.78%，显现出该方案在控制尿失禁症状的积极作用。同时，得益于盆底肌肌力的恢复，患者尿失禁症状得到有效控制，并表现为排尿的改善及 ICI-Q-SF 评分的显著下降。然而，虽然盆底肌功能训练能够改善远端尿道括约肌循环并加强其功能，减轻创面局部炎症水肿对括约肌关闭机制的影响，但在减少漏尿方面仍存在局限性，患者往往需使用纸尿裤。纸尿裤的应用常伴随着会阴明显不适感，且尿液不良气味对患者日常生活和社会交往的影响较为明显。为解决纸尿裤的弊端，有学者提出阴茎夹方案，即利用阴茎夹的机械控尿原理，通过部分替代尿道括约肌的作用，达到减轻漏尿症状的目的[27,28]。同时，阴茎夹的使用具有简单方便、经济安全的优势，无需每日定期更换，有助于降低患者经济负担。本研究观察组漏尿症状物理控制费用低于对照组，印证了上述结论。在尿失禁发生率的对比中，可以发现，观察组干预后 10 d、干预后 20 d、干预后 30 d、干预后 90 d 尿失禁发生率均低于对照组，且对两组患者尿失禁分度情况比较，观察组患者临床治愈率显著高于对照组，提示阴茎夹在控制尿失禁症状方面的作用更为明显。另外，与对照组相比，观察组干预后 90 d 每日总尿量有所上升，表明随着尿失禁症状的改善，患者对漏尿症状的畏惧心理减轻，每日水分摄入量有所增加，该结果也侧面反映了阴茎夹在改善尿失禁患者心理状态方面的积极作用。国外研究表明，阴茎夹在尿失禁的治疗中安全、有效，且能够被多数患者所接受[29,30]，本研究结果示，观察组干预后 90 d ICI-Q-SF 评分低于对照组，说明其生活质量改善更为明显，在印证上述结论的同时，也为阴茎夹的推广应用奠定了坚实的基础。

综上所述，在盆底肌功能训练的基础上联合阴茎夹能够有效改善前列腺增生术后患者尿失禁症状及生活质量，且有助于降低患者经济负担，值得临床广泛推广应用。

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