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经尿道前列腺等离子剜除术对大体积前列腺增生患者尿动力学、性功能及生活质量的影响*

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摘要 目的:探讨经尿道前列腺等离子剜除术(TUERP)对大体积前列腺增生(BPH)患者尿动力学、性功能及生活质量的影响。**方法:**回顾性分析我院2016年4月~2019年1月期间收治的118例大体积BPH患者的临床资料,根据手术方式的不同分为经尿道前列腺电切术(TURP)组($n=57$,给予TURP治疗)和TUERP组($n=61$,给予TUERP治疗),比较两组患者围术期指标、尿动力学、性功能及生活质量,记录两组患者术后并发症发生情况。**结果:**TUERP组膀胱冲洗时间、手术时间、尿管留置时间短于TURP组,术中出血量少于TURP组($P<0.05$);TUERP组前列腺膀胱组织切除量多于TURP组($P<0.05$)。两组患者术后6个月最大尿流(Qmax)及生理功能、躯体疼痛、社会功能、情感职能、总体健康、生理职能、活力和精神健康等评分升高,且TUERP组高于TURP组($P<0.05$);残余尿量(PVR)降低,且TUERP组低于TURP组($P<0.05$)。TUERP组术后并发症发生率低于TURP组($P<0.05$)。TUERP组术后6个月勃起功能障碍、逆行射精占比低于TURP组($P<0.05$)。**结论:**TUERP治疗大体积BPH,可有效改善患者围术期指标、尿动力学、性功能及生活质量,同时还可减少并发症发生率,临床应用价值较高。

关键词:经尿道前列腺等离子剜除术;大体积;前列腺增生;尿动力学;性功能;生活质量

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Effects of Transurethral Plasma Enucleation of Prostate on Urodynamics, Sexual Function and Quality of Life in Patients with Massive Prostatic Hyperplasia*

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ABSTRACT Objective: To investigate the effect of transurethral plasma enucleation of prostate (TUERP) on urodynamics, sexual function and quality of life in patients with massive prostatic hyperplasia (BPH). **Methods:** The clinical data of 118 patients with BPH in our hospital from April 2016 to January 2019 were analyzed retrospectively. According to the different operation methods, they were divided into transurethral resection of prostate (TURP) group ($n=57$, TURP treatment) and TURP group ($n=61$, TURP treatment). The perioperative indexes, urodynamics, sexual function and quality of life of the patients in the two groups were compared, and the results were recorded Occurrence of the disease. **Results:** The bladder washing time operation time and catheter retention time of tuerp group were shorter than those of TURP group, and the amount of intraoperative bleeding was less than that of TURP group ($P<0.05$); the amount of prostatectomy and bladder tissue resection of tuerp group was more than that of TURP group ($P<0.05$). The maximum urinary flow (Qmax), scores of physiological function, physical pain, social function, emotional function, general health, physiological function, vitality and mental health were increased in the two groups 6 months after operation, and the score of TUPR group was higher than that of TURP group ($P<0.05$); the residual urine volume (PVR) was decreased, and the score of TUPR group was lower than that of TURP group ($P<0.05$). The incidence of postoperative complications in TURP group was lower than that in TURP group ($P<0.05$). The number of erectile dysfunction and retrograde ejaculation in the TUPR group was lower than that in the TURP group ($P<0.05$). **Conclusion:** compared with TURP, TURP can effectively improve the perioperative indexes, urodynamics, sexual function and quality of life of patients with BPH, reduce the incidence of complications, and have higher clinical application value.

Key words: Transurethral plasma enucleation of prostate; Massive prostatic hyperplasia; Urodynamics; Sexual function; Quality of life

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前列腺增生(Prostatic hyperplasia, BPH)是男性泌尿系统的常见疾病,主要是由于前列腺间质及腺体成分增生进而导致

前列腺肥大,若未能予以及时治疗,可发展为重度BPH,引发膀胱口梗阻及下尿路症状,导致尿频、尿急、尿不尽等排尿障碍,

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给患者生活质量带来严重影响^[1-3]。目前临床对于 BPH 的主要治疗方式有药物治疗和手术治疗, 其中大体积 BPH 在临床上较为多见, 发病后患者的日常生活会受到极大的影响, 通常需予以手术治疗^[4-6]。经尿道前列腺电切术(Transurethral resection of prostate, TURP)是目前治疗大体积 BPH 的金标准, 但长期的临床实践发现, 该术式尚存在一些缺陷, 如腺体切割不足, 术后引起的并发症也较多, 一定程度上影响了患者的治疗效果^[7,8]。近年来, 经尿道前列腺等离子剝除术(Transurethral plasma enucleation of prostate, TUERP)已逐渐应用于大体积 BPH 的治疗当中, 具有创伤小、安全性高等特点^[9,10], 但有关上述两种术式治疗大体积 BPH 孰优孰劣尚存在一定的争议。本研究就此展开分析, 以期临床大体积 BPH 的治疗提供参考。

1 资料与方法

1.1 基线资料

回顾性分析我院 2016 年 4 月~2019 年 1 月期间收治的 118 例大体积 BPH 患者的临床资料, 纳入标准: (1) 均符合欧洲泌尿外科学会指定的相关诊断标准^[11], 经直肠超声、相关实验室检查等确诊为 BPH; (2) 均符合手术指征; (3) 术前性功能正常者; (4) 术前前列腺体积均大于 80 mL; (5) 患者及其家属知情本研究且签署了同意书; (6) 随访资料完整者。排除标准: (1) 合并神经源性膀胱者; (2) 合并尿道狭窄、前列腺癌者; (3) 既往接受过膀胱开放手术者; (4) 合并严重器官性衰竭, 无法耐受手术者; (5) 合并严重感染性疾病者。将上述患者根据手术方式的不同分为 TURP 组($n=57$)和 TUERP 组($n=61$), 其中 TURP 组年龄 43~67 岁, 平均(52.83 ± 3.19)岁; 病程 2~9 年, 平均(4.36 ± 0.82)年; 术前前列腺体积 $81 \sim 109$ mL, 平均前列腺体积(96.82 ± 2.33) mL; 体质量指数(Body mass index, BMI) $21.3 \sim 26.8$ kg/m², 平均(24.61 ± 0.92) kg/m²。TUERP 组年龄 41~69 岁, 平均(53.29 ± 4.28)岁; 病程 1~9 年, 平均(4.53 ± 0.93)年; 术前前列腺体积 $83 \sim 114$ mL, 平均前列腺体积(97.38 ± 3.06) mL; BMI $21.8 \sim 26.5$ kg/m², 平均(24.93 ± 0.87) kg/m²。两组患者一般资料对比未见统计学差异($P>0.05$), 组间可比。

1.2 方法

术前准备: 两组患者入院后行常规检查, 并为其选择合适的术式, 择期行手术治疗。两组患者术前常规禁食禁水、消毒备皮, 手术体位均采用膀胱截石位, 麻醉方式为腰麻或连续硬膜外麻醉。TURP 组: 给予 TURP 治疗, 采用司迈电切设备, 电切

功率设置为 100~160w, 电凝功率为 80~100w, 以环状电极为电切器械。通过尿道置入膀胱镜, 观察患者前列腺各叶、尿道、精阜、内外括约肌、膀胱颈等解剖标志点, 将电切镜置入, 术中以膀胱颈为近端标志, 以精阜为远端标志, 由中叶 6 点处开始电切, 直至精阜上缘, 将左侧叶、右侧叶依次切除, 最后将前列腺尖部、精阜两侧增生的 BPH 组织切除。术后留置 Foley 三腔导尿管。TUERP 组: 给予 TUERP 治疗, 以精阜为参照, 在 5 点~7 点处点状切开尿道黏膜, 电切镜逆推至外科包膜平面, 并沿着该包膜进行镜性剥离, 剥离后将电切镜逆推至膀胱颈, 切除粘连纤维韧带并剥离至膀胱颈环形处, 快速切除增生腺体, 修整创面, 电凝止血。术后留置 F22 三腔导尿管。

1.3 观察指标

(1) 比较两组患者围术期相关指标, 包括: 手术时间、膀胱冲洗时间、前列腺膀胱组织切除量、尿管留置时间、术中出血量。(2) 两组患者均以门诊复查的方式随访 6 个月, 采用安多美达多通道尿动力仪器检测两组患者术前、术后 6 个月的尿动力学指标, 包括最大尿流(Maximum urine flow rate, Qmax)、残余尿量(Post-voiding residual volume, PVR)等指标。(3) 于术前、术后 6 个月采用国际勃起功能指数-5(International erectile function index-5, IIEF-5)^[12]测定两组患者性功能, IIEF-5 包括逆行射精、勃起功能障碍, 其中射精后在尿液中检出精子即为逆行射精; 勃起功能障碍标志为 IIEF-5 评分 0~18 分, 记录两组患者勃起功能障碍、逆行射精情况。(4) 记录两组患者随访期间并发症发生情况。(5) 于术前、术后 6 个月采用生活质量评分(Short form-36 health survey, SF-36)^[13]评价患者生活质量, 其中 SF-36 包括社会功能、生理功能、躯体疼痛、情感职能、生理职能、总体健康、活力和精神健康这 8 个维度。每个维度 0~100 分, 分数越高, 生活质量越好。

1.4 统计学方法

数据采用 SPSS25.0 进行统计分析。计量资料均通过正态性检验, 以均数 $\pm$ 标准差($\bar{x} \pm s$)表示, 行 t 检验。计数资料采用率(%)描述, 行 χ^2 检验。检验标准设置为 $\alpha=0.05$ 。

2 结果

2.1 围术期指标比较

TUERP 组手术时间、膀胱冲洗时间、尿管留置时间短于 TURP 组, 术中出血量少于 TURP 组($P<0.05$); TUERP 组前列腺膀胱组织切除量多于 TURP 组($P<0.05$); 详见表 1。

表 1 两组围术期指标比较($\bar{x} \pm s$)

Table 1 Comparison of perioperative indexes between the two groups($\bar{x} \pm s$)

Groups	Operative time(min)	Bladder flushing time (h)	Prostatectomy volume (g)	Catheter retention time (h)	Intraoperative hemorrhage(mL)
TURP group($n=57$)	70.98 ± 6.55	16.56 ± 2.08	67.34 ± 7.05	58.29 ± 5.54	135.32 ± 6.19
TUERP group($n=61$)	58.11 ± 4.64	9.53 ± 1.15	95.31 ± 8.93	42.27 ± 6.59	96.31 ± 7.22
t	12.379	22.918	18.797	14.243	31.407
P	0.000	0.000	0.000	0.000	0.000

2.2 尿动力学指标比较

两组患者术前 Qmax、PVR 比较差异无统计学意义($P>0.$

05); 两组患者术后 6 个月 Qmax 升高, 且 TUERP 组高于 TURP 组($P<0.05$); PVR 降低, 且 TUERP 组低于 TURP 组

($P < 0.05$); 详见表 2。

表 2 两组尿动力学指标比较($\bar{x} \pm s$)

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

Groups	Qmax(mL/s)		PVR(mL)	
	Preoperative	6 months after operation	Preoperative	6 months after operation
TURP group(n=57)	6.98±1.14	17.39±2.32*	123.56±18.98	32.09±7.38*
TUERP group(n=61)	7.06±1.11	23.45±2.29*	122.59±21.02	24.12±5.24*
t	0.386	14.274	0.262	6.799
P	0.700	0.000	0.793	0.000

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

2.3 性功能指标比较

两组术前逆行射精、勃起功能障碍占比比较差异无统计学意义($P > 0.05$); TURP 组术后 6 个月勃起功能障碍、逆行射精占比均升高($P < 0.05$); TUERP 组术后 6 个月逆行射精、勃起功能

障碍占比与术前比较差异无统计学意义 ($P > 0.05$); TUERP 组术后 6 个月逆行射精、勃起功能障碍占比低于 TURP 组($P < 0.05$); 详见表 3。

表 3 两组性功能指标比较[例(%)]

Table 3 Comparison of two groups of sexual function indexes[n(%)]

Groups	Erectile dysfunction		Retrograde ejaculation	
	Preoperative	6 months after operation	Preoperative	6 months after operation
TURP group(n=57)	16(28.07)	31(54.39)*	14(24.56)	26(45.61)*
TUERP group(n=61)	15(24.59)	17(27.87)	13(21.31)	15(24.59)
χ^2	0.324	8.586	0.176	6.462
P	0.569	0.003	0.675	0.011

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

2.4 生活质量比较

两组患者术前社会功能、生理功能、活力、精神健康、躯体疼痛、总体健康、生理职能、情感职能等评分比较差异无统计学

意义($P > 0.05$); 两组患者术后 6 个月上述维度评分均升高, 且 TUERP 组高于 TURP 组($P < 0.05$); 详见表 4。

表 4 两组生活质量比较($\bar{x} \pm s$, 分)

Table 4 Comparison of quality of life between the two groups($\bar{x} \pm s$, score)

Groups	Time	Physiological function	Physiological function	Somatic pain	General health	Social function	Vitality	Emotional function	Mental health
TURP group (n=57)	Preoperative	46.57±7.13	59.28±6.74	57.03±8.27	57.48±8.54	51.15±9.68	46.29±7.82	47.82±8.24	52.36±6.13
	6 months after operation	61.45±7.21*	70.93±8.06*	69.51±7.92*	72.23±9.47*	74.79±8.12*	67.38±8.57*	63.69±7.21*	69.57±7.19*
	Preoperative	47.03±8.73	60.19±8.96	56.80±9.26	56.38±7.34	52.76±8.24	46.62±8.31	47.27±6.05	53.75±7.38
TUERP group(n=61)	6 months after operation	78.89±9.64**	84.29±5.13**	78.81±9.62**	81.59±9.07**	82.83±6.09**	76.97±6.06**	76.34±5.73**	83.26±7.46**

Note: Compared with preoperative, * $P < 0.05$; compared with TURP group, ** $P < 0.05$.

2.5 并发症发生率比较

随访期间, TURP 组出现 4 例尿道狭窄、3 例膀胱颈痉挛、2 例包膜穿孔, 并发症发生率为 15.79%(9/57); TUERP 组出现 1 例尿道狭窄、2 例膀胱颈痉挛, 并发症发生率为 4.92%(3/61); TUERP 组术后并发症发生率低于 TURP 组($\chi^2=4.023$, $P=0.012$)。

3 讨论

近年来, 随着人们生活方式的变化以及人口老龄化的加剧, BPH 的发病率呈逐年递增趋势。据统计^[4], 在泌尿系统外科疾病中, BPH 的发病率约占 15%。BPH 发病后, 增生的前列腺组织可压迫尿道、膀胱, 引起尿急、尿频、尿不尽等尿道症

状^[15,16]。同时,前列腺的大小可随着年龄的增长而逐渐增大,其中40~79岁的男性的前列腺体积每年可增加0.6 mL^[17,18],而大体积的前列腺则是指增生前列腺体积均大于80 mL,此类大体积BPH因病情较为严重,保守治疗效果轻微,故通常给予手术治疗以阻止患者病情进展^[19,20]。现临床有关大体积BPH的手术理念主要是在保证增生的内腺部分完整切除的基础上,尽可能保留正常的前列腺外科包膜结构,以解决增生的前列腺引发的尿道症状^[21,22]。TURP、TUERP均是临床治疗BPH的常用微创术式,其中TURP起源于上世纪30年代,经历了80年的发展、改进、成熟,现已成为治疗BPH的常用术式。但据目前所查文献报道^[23],TURP术后远期BPH的复发率高达10%~15%,而开放手术前的BPH的复发率仅为6%。因此,大体积BPH的手术理念应增加创伤更小、并发症更少,且尽可能多的切除增生的前列腺腺体。TUERP融合了开放性前列腺切除术和TURP的技术优点,至今开展已十余年,但有关其能否替代TURP成为大体积BPH的标准术式,尚需进一步的研究以证实。

本次研究结果显示,TUERP组的围术期指标、生活质量评分情况均优于TURP组,可见相较于TURP,TUERP治疗大体积BPH,疗效显著。分析其原因,TUERP术中通过电切镜鞘对前列腺内腺进行游离,视野清晰,包膜血管清晰可见,利于手术操作,缩短手术时间,同时还可避免对机体组织造成损伤,减少术中出血量,利于患者术后恢复,改善患者生活质量^[24,25]。既往有研究指出^[26],对BPH患者展开手术治疗可能对其性功能造成不同程度的影响。同时,尿动力学是诊断BPH的常见标准之一,其中Qmax不仅可反映尿流率,还可反映膀胱压力,可有效判断逼尿肌功能及其损害程度。PVR亦是反映BPH病情严重程度的指标之一,当BPH发病时,PVR迅速增加。在本次研究中,TURP组患者术后勃起功能障碍率、逆行射精率均高于术前,而TUERP组手术前后逆行射精率、勃起功能障碍率比较无差异,且TUERP组尿动力学指标改善效果更佳。这可能是由于TUERP实施钝性分离时,因为视野清晰,对尿道外括约肌收缩功能的影响小,可有效改善尿道功能,促进患者恢复,进而对患者性功能、尿动力学影响轻微^[27,28]。另TUERP组术后并发症发生率低于TURP组,这可能是因为TUERP可最大程度的切除增生腺体,增生组织残留减少,术中精准止血,减少周围组织的热损伤,同时,TUERP可对外科包膜创面实施修切,减少手术对机体组织的损伤,进而减少术后并发症发生率^[29,30]。

综上所述,TUERP治疗大体积BPH,可有效改善患者的尿动力学、性功能及生活质量,促进术后恢复,同时还可减少并发症发生率,临床应用价值较高。

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