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The effect of transurethral prostate resection due to benign prostate hyperplasia on sexual functions

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Abstract

Benign prostatic hyperplasia is an important health problem that is common in the society and negatively affects the quality of life of patients. In our study, we aimed to reveal the effects of transurethral prostate resection performed for benign prostatic hyperplasia on erectile functions and quality of sexual life. We include 56 patients to whom performed transurethral resection of prostate between January 2011, and January 2012 in Türkiye Yüksek İhtisas Training and Research Hospital, Clinic of Urology. The patients were administered the International Prostate Symptom Score (IPSS), International Erectile Function Index (IIEF-5), Sexual Quality of Life (SQoL-M) questionnaires before the operation and the ejaculation method was asked. These questionnaires were repeated in the 6th month after the operation and compared with the pre-operative questionnaires. The mean age of 56 patients included in the study was 66.2±7.09 years. The mean of the IIEF-5 questionnaire was 15.2±7.4, 14.19±8.42 before the operation and 6 months after the operation, respectively. The mean SQoL-M questionnaire of the patients was 64.1±31.9, 59.08±31.9 before the operation and 6 months after the operation, respectively. There was no statistically significant difference between the IIEF-5 and SQoL-M questionnaires performed before and at the 6th month after the operation. Surgery has an important role in the treatment of benign prostatic hyperplasia. While patients are being treated, they suffer from different complaints after surgery. For this reason, it is important to evaluate the treatment method and patients before and after the operation.

Keywords: Erectile function, benign prostatic hyperplasia, transurethral prostate resection

Introduction

Benign prostatic hyperplasia (BPH) is a histological diagnosis that causes complaints known as lower urinary tract symptoms (LUTS) in patients. Its incidence increases with age and affects half of men in the 5th decade. Risk factors such as metabolic disease and obesity have also increased the incidence of BPH [1,2]. BPH negatively affects the quality of life of patients. With treatment, the risk of progression and complications related to the disease are reduced, while an improvement is achieved in the quality of life of the individual [3]. Treatment options for patients with BPH include follow-up, medical treatment and surgical treatment. Approximately 30% of men over 60 years of age require an intervention due to moderate or severe lower urinary

tract symptoms [2]. Ketabchi et al. In 2013, reported that more than 300,000 prostatectomy operations were performed each year, and the majority of these operations were transurethral resection of the prostate (TUR-P) [4].

It is considered that there is a link between patients with BPH and erectile dysfunction (ED). Approximately 94% of men with severe BPH / LUTS are accompanied by ED [5]. In patients with BPH, as the severity of LUTS increases, the negative effect on sexual functions increases [6]. Both BPH itself and its surgical treatment may pose a risk for ED [7].

The most important issue after surgery in patients undergoing surgical treatment for BPH is the maintenance of erectile function [8]. However, the effect of TUR-P on erectile function is not clear [9]. This debate continues, especially because erection is affected by hormonal, arterial, venous, neurological, psychogenic and environmental factors [6].

In this study, we aimed to reveal the effects of TUR-P due to BPH on erectile functions and sexual life quality.

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Materials and Methods

Our study was prepared in accordance with the principles of the Declaration of Helsinki and approved by the local ethics committee (Ethics committee approval number: E2-21-293). 56 patients who underwent monopolar TUR-P operation for BPH were included. All operations were performed by the same surgeon. Written informed consent was obtained from all patients. Preoperative histories of the patients were taken and hypertension, diabetes, heart failure and neurological diseases were questioned in their history. Patients with urethral stricture, bladder neck stenosis and who had previously undergone genitourinary system surgery were excluded from the study.

International Prostate Symptom Score (IPSS), International Erectile Function Index (IIEF-5), Sexual Quality of Life (SQoL-M) questionnaires were conducted face-to-face with the patients before and 6 months after the operation and the patients were asked about the ejaculation method.

Blood biochemistry, hemogram, complete urinalysis, serum total PSA (TPSA) and free PSA (FPSA) values of the patients were measured before the operation and 6 months after the operation. Uroflowmetry (Qmax, Q mean, voided volume and voiding time) and post-void residual urine volume that measured by transabdominal ultrasonography before the operation and 6 months

after the operation were performed.

Ejaculation type, Qmax, Qort, post-void residual urine volume (PVR), IPSS, IIEF-5 and SQoL-M values of the patients before and after the 6th months of operation were compared. The changes in IIEF-5 and SQoL-M scores were analyzed statistically in order to determine the effects of TUR-P operation on erectile and sexual functions.

Statistical Analysis

'SPSS 20 for Windows' was utilized for Statistical analysis of the data we obtained. The distribution of data was tested by Shapiro-Wilk test. The data in our study were given as mean $\pm$ standard deviation. Paired t-test was used for statistical comparison of variables before and after TUR-P. A p value below $p < 0.05$ was considered significant.

Results

The mean age of 56 patients included in the study was 66.2 ± 7.09 years. The mean prostate volume of the patients measured before the operation was 62.08 ± 20.8 ml. The average PVR values were 110.2 ± 106.2 , 34.4 ± 36.0 before the operation and 6 months after the operation, respectively. These values were found to be statistically significant ($p < 0.001$) (Table 1).

Table 1. Statistical comparison of data before TUR-P and 6 months after TUR-P

	Before TUR-P (Mean $\pm$ Standard Deviation)	6 th month after TUR-P (Mean $\pm$ Standard Deviation)	p
IIEF-5	15.232 $\pm$ 7.463	14.196 $\pm$ 8.428	p=0.242
SQoL-M	64.107 $\pm$ 31.931	59.089 $\pm$ 31.970	p=0.150
IPSS	22.017 $\pm$ 7.302	4.625 $\pm$ 4.379	p<0.001
PVR (ml)	110.214 $\pm$ 106.232	34.418 $\pm$ 36.008	p<0.001
Q max (ml/sn)	9.428 $\pm$ 3.536	19.160 $\pm$ 6.271	p<0.001
Q ort (ml/sn)	4.482 $\pm$ 1.716	9.821 $\pm$ 3.804	p<0.001

A value of $p < 0.05$ indicates that it is statistically significant. Paired t test was used for statistical analysis.

The mean Qmax (ml/sec) in uroflowmetry examinations of patients who underwent TUR-P were 9.4 ± 3.5 , 19.1 ± 6.2 before the operation and in the 6th month after the operation, respectively. These values were statistically significant ($p < 0.001$) (Table 1). In the uroflowmetry examinations of the patients, the mean Qort (ml/sec) was 4.4 ± 1.7 , 9.8 ± 3.8 before the operation and at the 6th month after the operation respectively. These values were also found to be statistically significant ($p < 0.001$) (Table 1). The mean IPSS questionnaire of the patients was 22 ± 7.3 , 4.6 ± 4.3 before and 6 months after the operation, respectively. These values were found to be statistically significant ($p < 0.001$) (Table 1).

The mean IIEF-5 questionnaire of the patients who underwent TUR-P was 15.2 ± 7.4 , 14.19 ± 8.42 before the operation and 6 months after the operation, respectively. These values were not statistically significant ($p > 0.05$) (Table 1). The mean SQoL-M questionnaire of the patients was 64.1 ± 31.9 , 59.08 ± 31.9 before the operation and 6 months after the operation, respectively.

These values were not statistically significant ($p > 0.05$) (Table 1). Retrograde ejaculation was observed in 68% of the patients after the operation.

In our study, we compared the alterations in IIEF-5, SQoL-M, IPSS, Qmax, Qort, PVR that occurred in patients who underwent TUR-P operation. Although the IIEF-5 and SQoL-M scores of the patients after the operation decreased compared to the preoperative period, this difference was not statistically significant ($p > 0.05$).

Discussion

The incidence of BPH with erectile dysfunction is high. The treatments used, like BPH itself, also affect the ejaculation style and erectile functions of patients. Different results have been reported in studies about the effects of TUR-P, the gold standard method used in surgical treatment, on erectile function and sexual functions [3,9].

After TUR-P, degradation occurs in the amount of ejaculate and retrograde ejaculation. In a metaanalysis, this rate was found to be 63% [10]. In other studies, retrograde ejaculation has been reported in 66% to 70% [11,12]. In our study, it was seen at a rate of 68% in accordance with the literature [12]. In a metaanalysis including 12 randomized controlled studies comparing the effects of benign prostatic hyperplasia treatments on sexual functions, retrograde ejaculation after TURP was significantly higher than the wait and see option, and it was found to be lower than open prostatectomy [13].

Several studies indicated that TUR-P negatively affects erectile function, due to age, cavernous nerve damage, cavernous artery thrombosis and fibrosis, capsule perforation, patient's desire to protect himself from trauma after the operation, bleeding, pain in the urethra that did not fully recover during erection, and psychological factors [14-16]. Sexual problems such as ED and ejaculatory disorders are strongly associated with the severity of the LUTS [3]. Men with severe BPH were found to have significantly decreased libido, difficulty achieving an erection, and lower levels of sexual satisfaction compared to men with a mild form of BPH [17]. With the treatment of LUTS, there is a general improvement in the sexual functions of patients with pre-existing ED and ejaculatory dysfunction. The negative psychological effects that occur after the operation may reclaim over time. With the healing of the urethra, the pain that occurs during erection can be eliminated [6,9].

In our study, we found that there was no change in the erectile and sexual functions of the patients after TUR-P. Other studies have shown that erectile function remains unchanged or improves, similar to our study [9,14]. It has been reported that patients who experienced problems in erectile function and ejaculation after TUR-P had a higher recovery rate than patients whose symptoms worsen [18]. Post-operative patients may have endothelial recovery and this contributes positively to erectile functions. Some studies indicate that TUR-P negatively affects erectile function, because of the cavernous nerve damage and neuropraxia [6,9]. However, it has been shown that neuropraxia (localized loss of myelin), nerve damage (axonal damage) occurred during the operation can be improved by nerve regeneration after the operation. It has been stated that recovery in neuropraxia takes 3 months. Secondary branching has been seen when 30% of the axon is damaged. In such case, it was implied that recovery started within the first 4 days to 4 months after the injury [9]. For this reason, instead of the early evaluation of sexual functions after TUR-P, we recommend an evaluation at the 6th month and after, as in our study. In this circumstances, we think this process is more effective and more accurate in showing the results. Other studies support our work on this manner. It has been shown that the degradation in erectile functions recovered after 6 months of patients whose erectile functions at the 1st and 3rd month controls were impaired after TUR-P [6]. In another study including a 12-year follow-up period, it was stated that TUR-P did not affect sexual function negatively and that long-term sexual function was preserved after TURP [19]. After TUR-P, mental stress decreases and libido returns to normal levels, as a result, there is a significant improvement in erectile function in 3 months after surgery [9]. Again, in studies examining the effects of two types of energy (monopolar and bipolar) used in TUR-P on ED, it was reported that operations had similar

IIEF scores in both groups. In addition to erectile functions, no difference was reported between the two types of surgery in terms of perception of orgasm and ejaculatory function results [20].

As a result, pre-operative and post-operative sexual functions are important in patients with BPH. In our study, we found that there was no alteration in the erectile and sexual functions of the patients after TUR-P. Therefore, it can be mentioned to the patients that TUR-P operation can be performed safely in terms of sexual functions. The limitations of our study are that being single centered and the small patient group. We consider that multi-center studies with greater participation will also support our results.

Conflict of interests

The authors declare that they have no competing interests.

Financial Disclosure

All authors declare no financial support.

Ethical approval

Before the study, permission were obtained from the Türkiye Yüksek İhtisas Training and Research Hospital.

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