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ORIGINAL ARTICLE

Incidence of Erectile Dysfunction Following Urological Procedures

Arda Tongal [1], Ali Nihat Gökcan [1], Sıtkı Ün [2], Hakan Türk [3]

[1] Department of Urology, Faculty of Medicine, Uşak University Uşak Training and Research Hospital, Uşak, Türkiye
[2] Department of Urology, Faculty of Medicine, Pamukkale University, Denizli, Türkiye
[3] Department of Urology, Private Öztan Hospital, Uşak, Türkiye

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Abstract

Objective: To find out how often men develop ED after common urological procedures.

Materials and Methods: Our study is a single-center, retrospective chart review. Sexually active patients over the age of 18 who had not undergone any previous endourological procedures were included. Age, comorbidities, and erectile function scores based on the International Index of Erectile Function (IEF), which is routinely completed in our clinic at the preoperative, fourth, and 12th weeks after surgery, were reviewed.

Results: A total of 310 patients were included with a mean age of 54.7±7.42 years. Significant decreases in IIEF scores were observed at the fourth postoperative week across all procedure groups compared to preoperative scores ($P < 0.001$). By the 12th week, LIEF scores significantly improved compared to the fourth week ($p < 0.001$) but remained lower than baseline values ($p < 0.005$). These results were consistent in all patient groups.

Conclusion: In our study, IIEF scores significantly decreased at the 4th week after urological procedures, with partial recovery by the 12th week, although values remained below baseline. Larger prospective studies are needed to confirm these findings.

Keywords: benign prostatic hyperplasia, erectile dysfunction, urolithiasis

INTRODUCTION

Erectile dysfunction (ED) is a common problem that can seriously affect the quality of life in men and their partners. It has been reported to affect 45.2% of men between the ages of 40 and 70 (1). The causes of ED are complex and can be organic, psychological, or a mix of both. Among organic causes, the most common is related to blood vessels. Problems such as endothelial dysfunction, low-level inflammation, and low testosterone levels are among the main reasons (2).

Many patients worry about possible sexual problems after urological procedures. However, there are not many studies about how these procedures affect sexual function and quality of life. This makes it hard to give patients clear answers based on scientific evidence. Since these urological procedures are often done in urology clinics, the risk of ED after the procedure is important for both patients and doctors. In this article, we aimed to find out how often men develop ED after common endourological procedures.

Corresponding Author: Arda Tongal, MD, Resident Doctor, Department of Urology, Faculty of Medicine,Uşak University Uşak Training and Research Hospital, Uşak, Türkiye
Email: ardatngl@gmail.com

MATERIAL AND METHODS

Our study is a single-center, retrospective chart review. We included patients who underwent transurethral resection of the prostate (TUR-P), transurethral resection of the bladder tumor (TUR-BT), ureterorenoscopy (URS), or percutaneous nephrolithotomy (PCNL) in our clinic between January 2020 and January 2025. We also included patients who underwent a prostate biopsy, even though it is not an endourological procedure, because it is commonly performed in daily practice.

Sexually active patients over the age of 18 who had not undergone any previous endourological procedures were included. Patients were excluded if they had a history of previously diagnosed urological cancer, previous pelvic surgery, pelvic radiotherapy, or were already receiving treatment for erectile dysfunction. The patients who underwent TUR-BT are primary bladder tumor patients, and patients who have already been diagnosed with bladder cancer are excluded.

Data were collected retrospectively from patient records. Age, comorbidities, and erectile function scores based on the self-reported International Index of Erectile Function (IIEF), which is routinely completed in our clinic at the preoperative, fourth, and 12th weeks after surgery, were reviewed.

The study was approved by the Uşak University Non-Interventional Clinical Research Ethics Committee (Approval No: 796-796-17).

Statistical Analysis

IBM SPSS Statistics V22.0 was used for statistical analysis. Data were tested for normal distribution using the Kolmogorov-Smirnov test. The Mann-Whitney U test was used for data not showing a normal distribution, and the Student t-test was used to compare data with normally distributed data. Changes in IIEF scores were compared using the paired t-test. Statistical significance was accepted when the p-value was less than 0.005.

RESULTS

After applying the inclusion and exclusion criteria and excluding patients with missing or unavailable data, we analyzed a total of 310 patients. The mean age was 54.7±7.42 years. Diabetes mellitus (DM) was present in 93 patients, hypertension (HT) in 155 patients, chronic obstructive pulmonary disease (COPD) in 62 patients, and coronary artery disease (CAD) in 62 patients.

Procedures performed were as follows: 11 TUR-P, 72 TUR-BT, 155 URS, 61 PCNL, and 11 transrectal prostate biopsies. The mean ages for these groups were 58.18±3.99, 55.19±6.93, 53.58±8.35, 55.56±5.76, and 58.91±3.75 years, respectively. Descriptive statistics are summarized in Table 1.

Table 1. Descriptive statistics

Comorbidities	N(number of patients)	%(percentage)
DM	93	%30
HT	155	%50
COPD	62	%20
CAD	62	%20

In patients who underwent TUR-P, the mean preoperative IIEF score was 26.53±2.93. At the fourth postoperative week, it dropped significantly to 18.78±2.44 ($p < 0.001$). At the 12th week, the score increased to 25.18±2.40, which was significantly higher than the fourth week score ($p<0.001$), but still significantly lower than the preoperative value ($p<0.003$) (Table 2).

In patients who underwent TUR-BT, the mean preoperative IIEF score was 24.46±4.79. It significantly decreased to 17.19±3.68 at the fourth postoperative week ($p < 0.001$). By the 12th week, it increased to 23.44±4.32, which was significantly higher than the fourth week score ($p<0.001$), but still significantly lower than the preoperative score ($p<0.001$) (Table 2).

In the URS group, the mean preoperative IIEF score was 24.94±4.00. At the fourth week, it dropped to 17.43±2.98 ($p < 0.001$). At the 12th week, the score rose to 23.89±3.53, which was significantly higher than at the fourth week ($p<0.001$), but remained significantly lower than the baseline ($p<0.001$) (Table 2).

In patients who underwent PCNL, the mean preoperative IIEF score was 24.62±4.35. It significantly dropped to 16.69±3.26 at the fourth postoperative week ($p<0.001$), and increased to 23.87±3.98 at the 12th week, which was significantly higher than the fourth week score ($p<0.001$), but still lower than the preoperative score ($p<0.001$) (Table 2).

In the prostate biopsy group, the mean preoperative IIEF score was 25.82±3.76. At the fourth week, it significantly decreased to 18.00±2.60 (p<0.001). At the 12th week, it increased to 24.45±2.97, significantly higher than at the fourth week (p<0.001), but still significantly lower than the baseline value (p<0.004) (Table 2).

When all patients were analyzed together, the mean preoperative IIEF score was 24.86±4.23. This decreased significantly to 17.27±3.18 at the 4th week (p<0.001), then increased to 23.85±3.76 at the 12th week, significantly higher than at the fourth week (p<0.001), but still significantly lower than the preoperative score (p<0.001) (Table 2).

Table 2. IIEF scores of patient groups at preoperative and postoperative visits

N	TUR-P	TUR-M	URS	PCNL	PXBX	Total
	72	155	62	61	11	310
Age	58.18 ± 3.99	55.19 ± 6.93	53.58 ± 8.35	55.56 ± 5.76	58.91 ± 3.75	54.7 ± 7.42
preop. IIEF score	26.53 ± 2.93	24.46 ± 4.79	24.94 ± 4.00	24.62 ± 4.35	25.82 ± 3.76	25.82 ± 3.76
postop. 4th week IIEF score	18.78 ± 2.44 p<0.001	17.19 ± 3.68 p<0.001	17.43 ± 2.98 p<0.001	16.69 ± 3.26 p<0.001	18.0 ± 2.60 p<0.001	18.00 ± 2.60 p<0.001
postop. 12th week IIEF score	25.18 ± 2.40 p<0.003	23.44 ± 4.32 p<0.001	23.89 ± 3.53 p<0.001	23.87 ± 3.98 p<0.001	24.45 ± 2.97 p<0.004	24.45 ± 2.97 p<0.004

DISCUSSION

Erectile dysfunction (ED) is a growing health problem with increasing prevalence and importance, especially due to the rapidly aging global population. ED significantly affects the quality of life of both men and their partners. Its prevalence has been reported as 45.2% among men aged 40-70 years (1).

Endourological procedures have become central to modern urology practice. Despite advances in technology and the development of alternative treatments, TUR-P remains the standard surgical option, especially for patients with small prostates. TUR-BT is still essential in the treatment of bladder tumors. For urinary stones, the choice of URS or PCNL depends on the stone's size and location, and both remain widely used.

In our study, we observed a significant decrease in IIEF scores at the fourth postoperative week in all male patients who underwent TUR-P, TUR-BT, URS, PCNL, and transrectal prostate biopsy.

Although IIEF scores at the 12th postoperative week were significantly higher than at the fourth week, they were still significantly lower than the preoperative scores in all groups.

In the study by Akman et al., patients who underwent monopolar and bipolar TUR-P showed reduced IIEF scores at the first postoperative month, but scores improved within a year. These results are consistent with ours, although in our study, the decline persisted at 12 weeks (3). In contrast, the study by Al Demour et al. showed that although ejaculatory function worsened after TUR-P, no significant drop in IIEF scores was reported (4)

Peng et al. examined the incidence of ED after TUR-B in men under and over 45 years old using IIEF scores. They found that ED significantly increased in men under 45, while no meaningful change was seen in the older group (5). However, in our study, despite the average age being over 45, we still observed a significant decrease in IIEF scores after TUR-B.

Bolat et al. evaluated IIEF scores in URS patients at the preoperative, first month, and third month. Monthly time points. Similar to our findings, they found a significant drop in scores at the first month post-op, and although scores improved by the third month, they remained lower than pre-op values (6).

Although prostate biopsy is not technically an endourological procedure, it is commonly performed in daily practice and directly involves the prostate. Therefore, we included patients who underwent transrectal ultrasound-guided prostate biopsy in our analysis. Like in the endourological procedures, we observed a decrease in IIEF scores at the 4th and 12th

weeks after the procedure. Similarly, Tan et al. reported that in patients undergoing transperineal prostate biopsy, about one-fourth of those without prior ED developed ED within four weeks, and ED worsened in about one-third of those with pre-existing ED (7).

URS, TUR-P, and TUR-BT procedures included in our study are done under spinal regional anesthesia. The prostate biopsies are done under local anesthesia using a prostatic block, and PCNLs are done under general anesthesia. Even though in our study, the IIEF score differences between procedures that are done under different anesthesia types are not studied, we believe anesthesia type and anesthesia itself are important factors in postoperative ED. We hypothesize that the surgical and psychological stress that our patients experience is an important factor in explaining the postoperative ED. The nature of many endourological procedures being done via the penile urethral route is also a contributing factor to the psychological stress, in our opinion.

Our study is a retrospective chart review. Its main limitations are the small sample size and its retrospective design. We did not classify ED severity based on IIEF scores, and we did not separately evaluate patients with and without preoperative ED.
We believe that our study provides valuable insights by taking a holistic approach to evaluating patients who underwent procedures that are part of routine practice in urology clinics.

CONCLUSION

In our study, we observed a decrease in self-reported IIEF scores at the 4th week after urological procedures, with partial recovery by the 12th week. However, scores remained below baseline levels. Larger prospective studies are needed to reach definitive conclusions.
We emphasize the importance of assessing erectile function in the preoperative period and informing patients about possible postoperative sexual outcomes. We hope our study will serve as a guide regarding sexual function after these procedures.

Conflict of Interest: The authors declare no conflicts of interest.

Informed Consent: No consent was obtained due to retrospective design.

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Ethical Approval: The study was approved by the Uşak University Non-Interventional Clinical Research Ethics Committee (Approval No: 796-796-17).

Author Contributions:
Concept and Design: 3, 4
Supervision: 3, 4
Data Collection and/or Processing: 1, 2, 3
Materials: 1, 2, 3, 4
Analysis and/or Interpretation: 1, 3, 4
Literature Search: 1, 3
Writing and Critical Review: 1, 2, 3, 4

REFERENCES

1. Kessler, A., Sollie, S., Challacombe, B., Briggs, K., & Van Hemelrijck, M. (2019). The global prevalence of erectile dysfunction: A review. BJU International, 124(4), 587–599. https://doi.org/10.1111/bju.14813
2. Persu, C., Cauni, V., Gutue, S., Albu, E. S., Jinga, V., & Geavlete, P. (2009). Diagnosis and treatment of erectile dysfunction—a practical update. Journal of Medicine and Life, 2(4), 394–400. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3019009/
3. Akman, T., Binbay, M., Tekinarslan, E., Tepeler, A., Akcay, M., Ozgor, F., Ugurlu, M., & Muslumanoglu, A. (2013). Effects of bipolar and monopolar transurethral resection of the prostate on urinary and erectile function: A prospective randomized comparative study. BJU International, 111(1), 129–136. https://doi.org/10.1111/j.1464-410X.2012.11266.x
4. Al Demour, S. H., Abuhamad, M., Santarisi, A. N., Al-Zubi, M., Al-Rawashdah, S. F., Halalsheh, O., Carbone, A., Pastore, A. L., & Ahmad, M. M. (2022). The effect of transurethral resection of the prostate on erectile and ejaculatory functions in patients with benign prostatic hyperplasia. Urologia Internationalis, 106(10), 997–1004. https://doi.org/10.1159/000524957
5. Guo, P., Wang, Y., Xie, Y. F., & Lv, T. B. (2022). Erectile dysfunction in nonmuscle-invasive bladder cancer patients before and after transurethral resection (TUR) of bladder tumor in China. Asian Journal of

Andrology, 24(5), 509–512. https://doi.org/10.4103/aja202166

6. Bolat, M. S., Akdeniz, E., Asci, R., Erdemir, F., Cinar, O., & Tomak, L. (2017). Ureterorenoscopy with stenting and its effect on male sexual function: A controlled randomised prospective study. Andrologia, 49(9), e12746. https://doi.org/10.1111/and.12746

7. Tan, J. L., Papa, N., Hanegbi, U., Snow, R., Grummet, J., Mann, S., Cuthbertson, A., Frydenberg, M., & Moon, D. (2021). Predictors of erectile dysfunction after transperineal template prostate biopsy. Investigative and Clinical Urology, 62(2), 159–165. https://doi.org/10.4111/icu.20200236