



The urethral stricture after TURP in benign prostatic hyperplasia patients is determined by history of urethral surgery

Nephrology

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ABSTRACT

Introduction: Benign prostatic hyperplasia (BPH) is one of the major problems in the urinary tract of the male. Transurethral resection of the prostate (TURP) is the gold standard in the treatment of BPH. This study aimed to evaluate the frequency of stricture in BPH patients treated with TURP.

Methods: In this cross-sectional study, we investigated the frequency of stricture in BPH patients treated with TURP. In addition, the correlation between influencing factors with stricture has been explored.

Results: Urethral stricture was found in 5.7% of BPH patients after TURP. Our findings showed a significant positive correlation between a history of urethral surgery and stricture ($P<0.01$). Other parameters, including duration of surgery ($P=0.22$), hematuria before ($P=0.36$) and after ($P=0.33$) treatment showed no significant association with stricture.

Conclusion: Taken together, history of urethral surgery is the most determinant factors in stricture of BPH patients treated with TURP.

KEYWORDS:

benign prostatic hyperplasia, TURP, urethral stricture

Introduction

Benign prostatic hyperplasia (BPH) is the most common non-malignant tumors in men [1]. The disease usually occurs in the fifth decade of life and about 80% of men in the seventh decade of life show symptoms [2, 3]. BPH is not a fatal disease, but its potential complications greatly affect the quality of life [3]. Transurethral resection of the prostate (TURP) is the gold standard in the treatment of BPH —[4]. Urethral stricture is one of the side effects of TURP and prostatectomy —[4].

Some previous studies are focused to analyze the correlation between the potential factors with urethral stricture after TURP [5, 6]. In a previous study, post-operative transurethral catheter proposed as important factor in stricture formation following TURP [5]. In a comprehensive study, it has been shown that lower resection speed, intraoperative urethral mucosa rupture and postoperative continuous infection are associated with urethral stricture after TURP [7]. Kumsar et al showed that poor glycemic control patients had a significant role in urethral stricture after TURP [8].

Considering that there is no data regarding the incidence of urethral stricture after TURP in Iranian men, the present study its incidence in this population. Furthermore, this study was conducted to evaluate the possible correlation between influencing factors with urethral stricture after TURP in Iranian men.

Materials and methods

Study population

In this cross-sectional, the clinicopathological parameters were collected from 210 patients diagnosed with BPH at Baghiatallah hospital, a major referral center in Tehran, Iran, during the years 2011-2015. Medical records were reviewed for data on clinicopathological factors, including age, BMI, hematuria before and after surgery, history of urethral surgery and duration of it. All data were analyzed using the SPSS software version 20 (SPSS, Chicago, IL, USA). The relationship of stricture with clinicopathological factors was evaluated using Pearson's chi-square or Fisher's exact test. The results were considered statistically significant if $P<0.05$.

Results

Study population

The mean age of population study was 68 years with minimum 49 and maximum 93 years. The BMI between 18.5 – 24.9 was seen in 144 (69%) and BMI between 25 to 29.9 was observed in 66 (31%). One hundred and seventy-four (83%) cases have not history of urethral surgery, but thirty nine had history of urethral surgery. Urethral stricture was found in 12 (5.7%) of cases, whereas urethral stricture was not detected in 210 (93%) of patients.

The correlation between urethral stricture and clinicopathological factors

The correlation between urethral stricture with clinicopathological factors was examined using Pearson's chi-square. Our analysis revealed a positive significant correlation between urethral stricture and history of urethral surgery ($P<0.01$). No significant association was found between urethral stricture and other clinicopathological parameters, including hematuria before and after surgery, duration of surgery, and prostate volume. All data are summarized in Table 1.

Table 1: The correlation between urethral stricture and clinicopathological factors

Parameters	Stricture (P-value)
Age	0.96
BMI	0.96
Prostate volume	0.75
Duration of surgery	0.22
Hematuria before surgery	0.36
Hematuria after surgery	0.33
Infection after surgery	0.58
History of urethral surgery	0.01

Discussion

Benign prostatic hyperplasia or BPH is one of the most common problems in older men is the urinary system [9]. This problem and its complications are increasing and these make large financial burden on the individual and community. The prevalence of BPH shows an increasing trend with aging, so that approximately 80% of men are involved at 70 years [10].

Standard treatment in patients with BPH is TURP method that has been used in recent decades. Urethral stricture is one of the complications

after TURP that its prevalence rate is 1 to 2 percent per year, or 229 to 627 per 100,000 per annum. Considering the important issue, in the current study, the frequency of urethral stricture was determined in the Iranian men. Our findings showed that the prevalence of urethral stricture in Iranian men was 5.7%. Reports on the prevalence of urethral stricture after TURP in Iranian population for comparison are very limited, but studies in other populations have been carried out. In line with the findings of our study, the results of a study conducted in China in 2013, revealed that the prevalence of urethral stricture after TURP 8 percent. Another study in 2013 in America shows the frequency of urethral stricture was 10/71%.

In the current study, mean age of population was 68 years. A study in 2013 by Palminteri and his colleagues show that the average age of patients is 45 years.

In another study, the average age of patients in America and Italy was 42/7 years and in India was 38/2 years [11]. In another study in 2009, in Ethiopia show that the average age of patients is 66/8 years [12].

Furthermore, in this study, there was a significant correlation between urethral stricture and history of urethral surgery. It has been demonstrated that any surgery in the urinary system increase the rate of urethral stricture.

Our findings indicated no obvious correlation between urethral stricture and prostate volume. A previous study showed that few patients with urethral stricture had a prostate volume greater than 80 cm³ [6]. On the other hand, in a study by Joshi and his colleagues on 65 patients, the incidence of urethral stricture was reported in approximately 3% [13]. They also showed that about half of patients had prostate volume more than 80 grams.

In the present study, the mean duration of surgery was 67 minutes in patients with BPH. In the study of Joshi and his colleagues, the average time of surgery in the patients with larger prostate volume was 110 minutes, whereas in patients with smaller prostate volume was 90 minutes.

In this study, the mean duration time of urethral stricture was 24 months. It has been reported that presence of catheter increased the risk of urethral stricture compared to absence of catheter [5].

Conclusion

In summary, urethral stricture was found in 5.7% of Iranian men after TURP. In addition, history of urethral surgery is the determining factors in the prevalence of urethral stricture in Iranian men with BPH.

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Conflict of interest

None.

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