

#345

Impact of nocturia on surgical decisions for the therapy of benign prostatic hyperplasia in Japanese patients

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Introduction

- Japanese guidelines revealed that surgical procedures for the treatment of benign prostatic hyperplasia (BPH) may be considered for the following cases:
 - Drug therapy is ineffective
 - Lower urinary tract symptoms are moderate-to-severe
 - Complications such as urinary retention, urinary tract infection, gross hematuria, and bladder stones are present.
- The decision to treat BPH surgically is mainly based on the severity of voiding symptoms, such as urinary retention. Nocturia is one of the urinary storage symptoms of BPH.
- To our knowledge, there are no studies evaluating whether nocturia influences the decision to treat BPH surgically. Thus, we used the international consultation on incontinence (ICIQ)-nocturia quality of life (N-QOL) questionnaire and evaluated the impact of nocturia on the decision to treat BPH surgically.

Methods

- Subjects: Patients who visited our institution for the treatment of BPH between June 2022 and March 2023.
- We evaluated N-QOL at the time of the initial visit. In addition, we simultaneously evaluated the international prostate symptom score (IPSS) and overactive bladder symptom score (OABSS).

Structure of N-QOL questionnaire

Sleep / Energy		Bother / Concern	
Q1	Concentration	Q6	Water intake
Q2	Energy	Q8	Disturbance to family
Q3	Naps	Q9	Waking up to urinate
Q4	Productivity	Q10	Deterioration
Q5	Leisure activity	Q11	Lack of effective therapy
Q7	Night-time sleep	Q12	Disturbance owing to nocturia
Q13	Overall obstacles in daily life		

- We compared the following two groups.
 - Patients who underwent surgical treatment with holmium laser enucleation of the prostate (HoLEP)
 - Patients who have received conservative treatment with alpha-blockers and/or any medications
- In this study, the patients who underwent HoLEP were regarded as Group 1 and the other patients were as Group 2.
- We examined the relationship between decision for surgical intervention and N-QOL, subscale domains (sleep/energy domain and bother/concern domain), and each of the scores. In addition, questions on nocturia in the IPSS and OABSS were evaluated.

Results

- Of the 53 patients identified with BPH, 44 were eligible for inclusion in the study. Nine patients did not complete all questionnaires without deficiency. Ultimately, twelve patients were in Group 1 and 32 patients were in Group 2 (Table 1).

Table 1. Patients’ backgrounds

	Group 1 (n = 12)	Group 2 (n = 32)	p value
Age	74.7	73.8	0.780
Initial PSA (ng/mL)	5.25 ± 0.63	3.78 ± 0.83	0.171
Prostate volume (mL)	69.75±11.28	41.94±4.38	0.037*
History of medication (n)			
α1 blocker	1	23	
5α reductase inhibitor	0	3	
PDE5 inhibitor	1	4	
Anticholinergics	1	4	
β3 stimulant	0	2	
Others	0	1	

* : p < 0.05, significant differentiation

- The prostate volume in Group 1 was significantly larger than Group 2 (p = 0.037).
- Mean N-QOL total score of Group 1 was significantly lower than that of Group 2 (p = 0.018).
- Mean bother/concern domain score of Group 1 was significantly lower than that of Group 2 (p = 0.014); however, the mean sleep/energy domain score has no significant difference between two groups (Table 2).

Table 2. Nocturnal voiding frequency and N-QOL scores

	Group 1	Group 2	p value
Nocturnal voiding frequency	3.00 ± 0.41	2.56 ± 0.21	0.364
N-QOL			
Total score	51.67 ± 4.84	67.39 ± 3.83	0.018*
Sleep / Energy	55.90 ± 6.10	69.79 ± 3.95	0.072
Bother/ Concern	47.23 ± 4.43	64.82 ± 4.50	0.014*
Q1	1.58 ± 0.36	1.00 ± 0.19	0.152
Q2	1.50 ± 0.31	1.13 ± 0.24	0.206
Q3	2.50 ± 0.31	1.69 ± 0.23	0.051
Q4	1.17 ± 0.24	0.75 ± 0.18	0.093
Q5	1.58 ± 0.43	0.91 ± 0.22	0.135
Q6	2.17 ± 0.35	1.22 ± 0.21	0.020*
Q7	2.25 ± 0.35	1.78 ± 0.21	0.232
Q8	0.75 ± 0.28	0.56 ± 0.19	0.316
Q9	1.33 ± 0.33	0.81 ± 0.21	0.101
Q10	3.08 ± 0.26	2.03 ± 0.23	0.015*
Q11	2.50 ± 0.34	1.66 ± 0.22	0.040*
Q12	2.33 ± 0.26	2.03 ± 0.23	0.456
Q13	5.00 ± 0.91	3.34 ± 0.47	0.095

* : p < 0.05, significant differentiation

- There are significant differences in QOL scores, but there is no difference in the actual nocturnal voiding frequency (p = 0.364).
- Comparison of the individual scores revealed that the following were significantly worse in Group 1: being worried about water intake (Q6), deterioration (Q10), and lack of effective therapy (Q11).

Discussion

- In this study, nocturnal voiding frequency was not found to be associated with surgical decisions for BPH. This study revealed that the QOL related to nocturia influenced the decision to opt for surgical treatment.
- There are reports of HoLEP improving nocturia postoperatively ¹⁾; however, there are no reports on the association between preoperative nocturia and HoLEP.
- A past report reported the following for patients who underwent HoLEP: 71.2% hoped for improvement of straining or hesitancy, 45.3% hoped for increased daytime frequency, and 35.9% hoped for improvement of nocturia, preoperatively ²⁾.
- Based on the results of this study, the indications for surgery for BPH need to be evaluated by assessing not only the IPSS, but also N-QOL.

Concluding message

- Examination of the indications for surgical intervention for BPH, with a focus on nocturia, revealed that QOL factors influenced the surgical decision rather than the nocturnal voiding frequency

References

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