URODYNAMIC ASSESSMENT IN EVALUATION OF BENIGN PROSTATIC HYPERPLASIA

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ABSTRACT

More than 50% of aging men suffer from lower urinary tract symptoms. Lower Urinary Tract Symptoms (LUTS) are very common symptoms among aging men. LUTS may be either due to storage or voiding disorder of bladder. The evaluation of BPH either due to storage or voiding disorder can be completed by urodynamic studies. A small percentage of cases with neurogenic component can be due to detrusor instability for which surgery alone gives poor outcome. Management of these patients are complex. The present study centres on the patients with BPH having bladder outlet obstruction associated with the neurogenic component.

KEYWORDS

BPH, LUTS, Urodynamic Study.

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INTRODUCTION

More than 50% of aging men suffer from Lower Urinary Tract Symptoms (LUTS) due to Benign Prostatic Hyperplasia (BPH) and is the most common condition in aging men.¹ LUTS may be either due to storage or voiding disorder of bladder. Moderate-to-severe symptoms occur in 40% and 80% of men after the age 60 and by 80 years, respectively. Nearly, all men develop subclinical BPH by the age of 50 years. Benign Prostatic Hyperplasia (BPH) may cause infravesical obstruction in nearly 50% of men over 60 years of age. Other important changes observed with age include an increased prevalence of involuntary detrusor contractions and increased Post Void Residual (PVR) urine volume. The evaluation of BPH either due to storage or voiding disorder can be complimented by urodynamic studies.² A small percentage of cases with neurogenic component can be associated due to detrusor instability, for which surgery alone gives poor outcome. Management of these patients are debatable. The present study centres on the BPH patients with pure bladder outlet obstruction or bladder outlet obstruction associated with the neurogenic component.³ The evaluation of BPH patients by IPSS symptom score, by anatomical and functional assessment and urodynamic evaluation consisting of cystometrogram, pressure flow studies, uroflowmetry and post void residual urine.^{4,5} The study was conducted on 60 patients who were admitted in Father Muller Medical College Hospital between August 2011 and September 2015 with Lower Urinary Tract Symptoms (LUTS) having BPH.

OBJECTIVES OF THE STUDY

1. To study the urodynamic evaluation in the assessment of Benign Prostatic Hyperplasia (BPH).

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2. To identify the contribution of neurogenic component to bladder outlet obstruction due to BPH.
3. To assess neurovesical dysfunction either pure or secondary as a contributing factor for bladder outlet obstruction in BPH patients.
4. To modify treatment protocol as to improve the treatment outcome in patients with BPH.

MATERIALS AND METHODS

The study was conducted on 60 male patients who were admitted in Father Muller Medical College Hospital between August 2011 and September 2015 with a diagnosis of Lower Urinary Tract Symptoms (LUTS) and BPH. On admission detailed history was taken and examined in detail to evaluate the cause; clinically all were diagnosed to have BPH following which patients were subjected for urodynamic evaluation. The management was based on the urodynamic evaluation.

Inclusion Criteria

Male patients having Lower Urinary Tract Symptoms (LUTS). Patients with clinically diagnosed BPH. Age more than 50 yrs.

Exclusion Criteria

Patients with stricture urethra.
Patients with carcinoma prostate.

RESULTS**Age Distribution**

In our study of urodynamic assessment of patients with BPH we found that 43% of patients with BPH present in the age group 61-70 years.⁶

	Frequency	Percent
51 – 60	13	21.7
61 – 70	26	43.3
71 – 80	17	28.3
Above 80	4	6.7
Total	60	100.0

Symptoms Assessment Type of LUTS

	Frequency	Percent
ST	17	28.3
V	43	71.7
Total	60	100.0

S - Storage, V - Voiding

In our study of urodynamic assessment of patients with respect to the type of LUTS with BPH, we found that 71.7% of patients with BPH presented with voiding symptoms.⁶

Duration

	Frequency	Percent
6 months and below	14	23.3
7 – 12 months	41	68.3
Above 12 months	5	8.3
Total	60	100.0

In our study of urodynamic assessment of patients with BPH, we found that 68% (41 patents) of patients with BPH presented with voiding symptoms (Frequency) > 7-12 months.

Clinical Diagnosis

All patients in the study had a clinical diagnosis of BPH.

IPSS Score

	Frequency	Percent
Mild	16	26.7
Moderate	3	5.0
Severe	41	68.3
Total	60	100.0

In our study, we found that 68.3% of patients presented with severe IPSS score warranting surgery.⁶

INVESTIGATIONS

Type of Voiding Dysfunction on Urodynamic Assessment

	Frequency	Percent
NG	21	35.0
NN	39	65.0
Total	60	100.0

NG: Neurogenic, NN: Non-Neurogenic

Treatment Outcome

	Frequency	Percent
S + CIC	19	31.7
S	41	68.3
Total	60	100.0

S: Surgery, S-CIC: Post-Surgery with CIC

In our study we found that all patients who visited for BPH consultation needed surgery as the treatment modality. The patient with both storage and voiding disorder requires Clean Intermittent Cauterization (CIC) following surgery.^{7,8,9}

DISCUSSION

Based on the results of the study and comparison with studies, the following inferences were drawn.

1. **Age Distribution** Majority of the patients presenting with BPH are in the age group of 61-70 yrs. and this may be explained by the fact that this age group is more vulnerable for lower urinary tract obstruction.^{5,6}
2. **Clinical Presentation:** All the patients having LUTS had both storage and voiding type. The symptoms assessed by IPSS scoring system about 68.3% of patients with BPH presented has IPSS score more than 24. About 71% of patients presented with voiding symptoms, 28% of patients presented with storage symptoms.^{7,8}

3. **Duration:** Most of the patients having symptom duration within one year. Among them 68.3% showed 7-12 months of symptom duration and about 23.3% were below 6 months of symptom duration.
4. **Urodynamic Evaluation:** About 65% of patients with BPH were having obstructive pathology and 35% of patients with BPH having both the obstructive as well as neurogenic pathology due to detrusor instability.^{10,10}
5. **Outcome:** It has been found that the group with the obstructive pathology the outcome of surgery is good. The outcome of surgery in obstructive pathology due to BPH along with detrusor instability was sub-optimal. These patients required post-operative Clean Intermittent Cauterization (CIC) to improve the post void residue.¹⁰

CONCLUSION

Urodynamic evaluation is a worthwhile investigation in patients with BPH as a significant proportion (More than 1/3rd) is affected by neurovesical dysfunction secondary to obstructive pathology. Identifying this segment of people can improve the treatment outcome of BPH patients.¹⁰

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