



A CLINICOPATHOLOGICAL AND CYSTOMETRIC STUDY OF BENIGN PROSTATIC HYPERTROPHY PATIENTS.

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ABSTRACT

In this study improvised cystometry was used on patients with symptomatic benign prostatic hypertrophy for preoperative evaluation. Cystometric evaluation of bladder compliance was done. There is an inverse relationship between severity of benign prostatic hypertrophy (BPH) and bladder compliance.

KEYWORDS : BPH, Cytometry, Compliance

INTRODUCTION

BPH is the most common benign tumor in men which is responsible for symptoms in majority of men older than 50 years of age. BPH has been known for centuries to be a cause of urinary dysfunction. It has been mentioned as early as 1500 BC by Egyptians and 1000 years later by Hippocrates. Symptoms of BPH are collectively termed as 'prostatism' consisting of irritative and obstructive symptoms. Compliance refers to the volume and pressure relationship of bladder filling and is expressed in millilitre per centimeter of water. Cystometry is the urodynamic evaluation of reservoir function of the lower urinary tract. Since standard cystometry was not readily available, there was a need to design an improvised cystometry at our set up.

MATERIAL AND METHOD

The present study was conducted in 61 patients suffering from prostatic enlargement, who were admitted to Maharani Laxmi Bai College and hospital, Jhansi from 1998 to 2000. Patients of different ages ranging from 50 to 80 years were or more were evaluated thoroughly. The history was taken, clinical examination was done and findings were recorded in pre designed proforma in all the cases. The symptoms found in elderly male patients attributed to prostatism were; difficulty in micturation, increased frequency, dribbling or retention overflow, retention urine and urgency. Other associated symptoms like fever, burning micturation and any evidence of uremia were also noted. Such patients were subjected to digital rectal examination for prostate gland enlargement and diagnosis of BPH was made. Investigations like CBC, Blood sugar, Blood urea, serum creatinine, urine examination and ultrasound abdomen were done. Now patients were subjected to dynamic cystometry. After informed consent patients were placed in supine position on the bed. Patients were catheterized with foley's triway catheter no. 20 fr. aseptically. The bladder was fully evacuated by pressing suprapubically. One irrigation channel of the catheter was connected to normal saline bottle and other connective tools CVP manometer for recording the intravesical pressure. Patients were asked not to strain. Filling was done at a rate of about 50 ml per minute. Patients were asked to inform when the first felt the sensation of voiding. At this point volume of saline filled and intravesical pressure were noted. Filling was restarted and second reading was taken when the patient had definitive or true desire for voiding. Third reading was taken when patient had uncontrolled desire for voiding (bladder capacity). Patients were divided in three groups as mild moderate and severe on the basis of International prostate symptom score (IPSS). results were recorded in tabulated form.

RESULTS

In the present study maximum number of patients were between 50 to 80 years. Out of 61 patients 25 were fell in moderate grade and 31 in severe grade as per IPSS.

Table 1. Age distribution in BPH patients

S.N.	Age (yrs)	No. Of patients
1	45-50	4
2	51-55	6
3	56-60	10
4	61-65	11
5	66-70	12
6	71-75	9
7	76-80	7

8	>80	2
	Total	61

Table 2. Distribution of patients according to IPSS

S.N.	IPSS	Grade	No. Of Cases
1	0 to 7	mild	5
2	8 to 19	moderate	25
3	20 to 35	severe	31

Table 3. Intravesical volume (ml)

S.N.	clinical interpretation	Normal	Mild	moderate	severe
1	First sensation	50-150	90-110	110-180	100-180
2	True sensation	150-250	160-220	130-280	110-280
3	Bladder sensation	350-450	340-410	210-350	230-300

Table 4. Intra vesical pressure (cm. of saline

S.N.	Clinical presentation	Normal	Mild	Moderate	Severe
1	First Sensation	2 to 3	3 to 5	3 to 8	5 to 11
2	True Sensation	4 to 5	4 to 7	5 to 10	6 to 13
3	Bladder Capacity	8 to 9	6 to 11	9 to 20	8 to 28

Table 5. Bladder Compliance(ml)

S.N.	Compliance	Volume (ml)
1	Normal	47.5
2	Mild	44.1
3	Moderate	21.09
4	Severe	17.54

DISCUSSION

The symptoms of BPH are believed to be the result of at least three different components i.e. static, dynamic and detrusor component. The static component is due to prostatic enlargement in the transition zone and periurethral granular tissue adjacent to urethra. The dynamic component involves increased muscle tone with obstruction. Irritative symptoms are present with impaired bladder contractility and detrusor instability. Urodynamic studies are essential in BPH patients to design therapy correctly and for improvement in symptoms after therapy. Computation of compliance is expressed as a change in bladder volume in milliliter during filling divided by bladder pressure in cm. of water. Anderson distinguished between bladders of high normal and low compliance. This work was an attempt to establish normal values for bladder compliance by water drip cystometry. Cystometry was considered normal if residual urine was below 50 ml, first sensation of desire to void took place between 150- 250 ml of filling and bladder capacity was between 300-600 ml. And the non inhibited contraction were absent.

CONCLUSION

Improvised cystometry can be used in place of standard cystometry in preoperative evaluation of symptomatic BPH patients with reasonable good results in set ups where facilities are not available. It is simple as well as economic method. And so is recommended in all BPH patients preoperatively. There lies an inverse relationship between severity of BPH and bladder compliance. This study nearly corresponds to previous studies using either standard cystometry or any other modified cystometric technique.

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