



## RELATIONSHIP BETWEEN INTRA-VESICAL PROSTATIC PROTRUSION(IPP) AND POST OPERATIVE OUTCOMES IN PATIENTS WITH BPH.

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**ABSTRACT** **PURPOSE OF STUDY** -To evaluate the significance of IVPP for predicting post operative outcomes in patients with BPH. **MATERIALS AND METHODS** - A total of 150 patients with a possible follow-up of atleast 6 months who were treated with TURP were analysed. The patients were divided into two groups on the basis of presence of significant IPP as one group having significant IPP (>5mm – 62 patients) and other group having no significant IPP ( 88 patients). We analysed the post-operative changes into the parameters such as IPSS, IPSS-QoL, maximum urinary flow rate (Qmax) and post-void residual urine(PVR). The IPSS was divided into IPSS voiding and storage symptoms. Multivariate logistic regression analysis was performed to identify whether IPP could predict the surgical outcomes of TURP. **RESULTS** - Pre-operative parameters were not significantly different between the two groups except for the total prostatic volume and transition zone volume. Post-operative changes in IPSS (total, storage and voiding subscore ) were higher in the significant IPP group than in no significant IPP group. Changes in the Qmax and PVR were not significantly different between the groups. Multivariate logistic regression analysis revealed that odds ratio of decreased IPSS and IPSS-s in the significant IPP group. **CONCLUSION** - Significant IPP is an independent factor for predicting better post-operative outcomes of IPSS and IPSS-S after TURP.

**KEYWORDS** : intra-vesical prostatic protrusion, benign prostatic hyperplasia, trans-urethral resection o prostate, IPSS.

### INTRODUCTION

Bothersome LUTS are the most common symptoms of BPH. Watchful waiting, medical therapy, conventional surgery and minimally invasive therapy are the various approaches in treating it. TURP is the time tested standard surgical therapy(1). Accurate prediction of surgical outcomes become the most important. Age, size, symptoms, transition zone index and urodynamic abnormalities were the parameters used for the same.(2)

Intra-vesical prostatic protrusion is an useful non-invasive method. It is used for predicting outcome trial without catheter(3), prediction of clinical progression during medical management and also in predicting the post-operative outcomes after TURP.

### AIM OF THE STUDY

The aim of this study is to evaluate the significance of IVPP in predicting the post-operative outcomes of patients with BPH

### MATERIALS AND METHODS

A total of 150 patients were selected. All of them had a minimum of 6 month follow up after TURP. This study was conducted from January 2017 to June 2018. The common indications of TURP were Recurrent AUR, Q max less than 15ml/sec, PVR exceeding 100 ml and upper urinary tract damage with chronic BOO. The exclusion criteria were the presence of urethral stricture, Neurogenic bladder, Previous bladder or urethral surgery and those who developed incontinence / erectile dysfunction after surgery

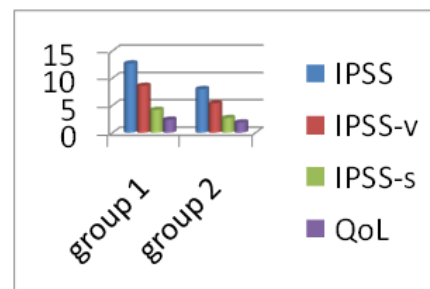
IVPP is the vertical distance from the tip of the prostate superiorly to the base of the urinary bladder in sagittal plane using TRUS. Two groups were dichotomized at a median of 5mm

- I – more than 5mm ( 62 patients )
- II – Less than 5 mm ( 88 patients )

Standard bipolar TURP was done with catheter removal on 4th pod. IPSS, IPSS-QoL, Qmax and PVR were the parameters assessed. IPSS was classified into voiding – IPSS –v and storage – IPSS –s. they were measured pre-operatively and 6 months following TURP. Statistical analysis was done with SPSS ver. 15.0

### RESULTS

Pre –operative values were not significantly different among the two groups. The mean age was around 70 yrs. The IPSS was around 22 and Qmax was around 8.5. After TURP, statistically significant difference was found among IPSS, IPSS –v, IPSS –s and QoL score. Changes in Qmax and PVR were not statistically insignificant.



**Figure 1:** chart depicting the comparison of the differences in the two groups

**TABLE – changes in the parameters**

Change in parameter	I	II	P value
IPSS	-12.7	-8.0	0.001
IPSS – V	-8.6	-5.4	0.035
IPSS – S	-4.3	-2.7	0.004
QoL	-2.4	-1.9	0.030
Qmax	7.5	6.6	0.441
PVR	81	62	0.229

### DISCUSSION

IPP is the plane of least resistance and mainly median lobe(4). Disruption of the funneling of the bladder neck during voiding is probably the cause of LUTS. Chia et al found out that IPP is a better and more reliable predictor of BOO. Tan and Foo, mariappan et al, Keqin et al(5) and Lieber et al had similar results

So far no reports have come on the prediction of outcomes after surgery. Traditionally accepted predictors are large adenoma, urodynamic evidence of BOO. Our study established a particularly significant relationship between IPP and IPSS–s. This is probably because of irritation of bladder neck and trigone by intravesical extension of the enlarged prostate

### LIMITATIONS

Different surgeons operated on these patients. TRUS and bladder scans that were done during the study were subjected to observer variations. Most of our patients followed up for only upto 6 months.

**CONCLUSION**

IPP is an independent parameter for predicting post-operative outcomes in BPH patients who undergo TURP. Surgeons can expect a better post-operative outcome in terms of changes in IPSS and IPSS-s in patients with significant intravesical prostatic protrusion. Further studies on long term follow up and a larger study group would be beneficial

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