

# A Study to Compare Transurethral Resection of the Prostate and Inguinal Hernioplasty as Combined and Separate Procedures

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## ABSTRACT

**Introduction:** Chance of recurring hernia depends greatly on type of surgical procedure and hernia. Practising Transurethral Resection of Prostate (TURP), hernioplasty as combined procedure is not infrequent although separate process is more followed. The combined approach of surgery could save repeated anaesthesia complications and decrease recovery time.

**Aim:** We appraise the result of TURP and inguinal hernia repair performed sequentially in a single session and compared to one when they are done separately.

**Materials and Methods:** This was a prospective study conducted from April 2015 to August 2017 at Sri Ramachandra Institute of Higher Education and Research, formerly Sri Ramachandra University, Porur, Chennai. All patients with inguinal hernia and benign prostate hypertrophy, over the age of 18 years, were divided into two groups, of 25 patients each. The first group underwent TURP and inguinal hernioplasty sequentially in a single session and the second group underwent TURP followed by inguinal hernioplasty as two separate procedures with a gap

of at least seven days. A detailed history, mode of presentation and clinical examination was done for all patients. Patients below 18 years or with a history of abdominal surgery or with other types of hernia were excluded from this study. Data were analysed by using SPSS version 19.0 (IBM, USA), using mean, percentage, frequency and standard deviation, ANOVA, paired t-test.

**Results:** Group 1 had higher mean prostate volume ( $48.66 \pm 7.172$ ) and post void residual ( $223.64 \pm 46.644$ ) than Group II ( $32.34 \pm 32.654$  and  $190.84 \pm 44.534$  respectively), which was significant. Comorbidities were insignificant between the groups. Mean operative time was longer for Group II ( $147.64 \pm 15.413$ ) but not significantly higher than Group I ( $143.40 \pm 23.836$ ). The mean length of hospital stay was significantly longer in Group II ( $9.44 \pm 1.557$ ) than Group I ( $6.04 \pm 2.051$ ). Patients in both groups had no significant difference in minor complication such as bleeding and clot retention.

**Conclusion:** Combined TURP and inguinal hernioplasty is safe and an effective operative.

**Keywords:** Hospital stay, Inguinal hernia repair, Recurring hernia

## INTRODUCTION

The risk of having recurring hernia varies from person to person and greatly depends on type of surgical procedure and hernia [1-3]. The treatment of hernia depends upon its size, severity and ranges from lifestyle changes to medication including surgery. Performing TURP procedure combined with hernioplasty in a single session is not infrequent, however, separate operation for individual cases is still in practice. If such operation which is in same site or nearby organ are clubbed together in one operation session, it could decrease the recovery time and also save repeated anaesthesia complications [3-7].

Hernioplasty is a surgery that repairs an inguinal hernia, in which a surgeon repairs the weakness in the abdominal wall. The procedure of open surgery and/or laparoscopic surgery depends on patient characteristics and hernia size. Hernioplasty follows a local or general anaesthetic procedure depending upon the specifics of the surgery. Patients are able to return on same day post surgery [8-10]. In this procedure, the chance of recurring hernia is low depending on the type of hernia and the surgical procedure.

Inguinal hernia repair has been safe, highly cost-effective and acceptable to most patients. In combined procedure, during same surgery procedure, two doctors perform each of the procedure. Otherwise, in separate procedure, there would be a gap of at least 3-6 months depending upon patient's condition at that time. TURP to treat Benign Prostatic Hyperplasia (BPH) has been the gold standard for decades and demonstrated to be cost-effective, efficient, most importantly, robust with low long-term complications and re-treatment rates. Complications of TURP include very minor complications such as failure to void (4.5% to 5.8%), urinary tract infection (3.6% to 4.2%),

surgical revision (1.1% to 5.6%), bleeding which requires transfusions (2.0% to 2.9%) and TUR syndrome (0.8% to 1.4%) [11-15].

The study aimed to know if patients get recovered within a short period of time if both the procedures are done together. Clinicians have reported doing mutual inguinal hernioplasty and transurethral prostatectomy under a single anaesthetic session [16-22]. Though practising combined TURP with herniorrhaphy is not infrequent but there are few published results showing its beneficial outcome [6,17,23]. Recent studies implicate that combined TURP and inguinal hernioplasty is practically safe and effective as individual operative procedure and good enough to reduce hospitalisation cost, allowing patients to undergo one anaesthetic procedure, and convalescence. The other valid point is that there are no recent studies done particularly after 2010. Also, with advancement in technology the operation procedures are now more sophisticated and aseptic. In this view, it is required to acknowledge the beneficial aspect of such combined operation procedure frequently. In this study authors appraise the result of TURP and inguinal hernia repair performed sequentially in a single session and compare to one when they are done separately.

## MATERIALS AND METHODS

This was a prospective study conducted from April 2015 to August 2017 at Sri Ramachandra Institute of Higher Education and Research, formerly Sri Ramachandra University, Porur, Chennai, India. An ethical permission (SRU/2017/GM/357) was sought from the Ethical Review Board of institute and informed consent from participants was obtained in this study.

The sample size was calculated to be 21 using Cochran's formula as per the estimation of proportion rate based on previous studies

[16,17]. All patients over 18 years of age, with inguinal hernia and benign prostate hypertrophy constituted the study population. A detailed history, mode of presentation and a clinical examination was done for all patients. Patients below 18 years or with a history of abdominal surgery or with other types of hernias were excluded. Patients were randomised into two groups following the admission number, the evens were assigned to Group I and odds were assigned to Group II, of 25 patients each. The first group underwent TURP and inguinal hernioplasty at the same time and the second group underwent TURP followed by inguinal hernioplasty as two separate procedures.

## STATISTICAL ANALYSIS

Data were analysed in SPSS version 19 (IBM, USA), using mean, percentage, frequency and standard deviation, ANOVA, paired t-test.

## RESULTS

Authors found maximum clustering of patients in the seventh decade of life followed by sixth decade, as shown in [Table/Fig-1]. Group 1 had mean prostate volume (cc) of size 48.66 cc and in Group II had a prostate volume of size 32.34 cc, which was significant. Also, post void residual urine in Group 1 had mean of 223.64 mL which was significantly higher than Group II, which had mean post void residual urine of 190.84 mL. The site and type of hernia did not vary between groups. There were no significant differences in comorbidities (obesity, diabetes mellitus, chronic obstructive pulmonary disease, and smoking) between the groups [Table/Fig-1].

Variables	Group 1 (n=25)	Group 2 (n=25)	p-value
	Mean±SD	Mean±SD	
Age (years)	66.76±8.894	69.16±10.270	0.982
<b>Hernia side, n (%)</b>			
Right side	13 (52%)	15 (60%)	
Left side	9 (36%)	10 (40%)	0.202 (N.S)
Bilateral	3 (12%)	0 (0%)	
<b>Hernia type, n (%)</b>			
Direct	17 (68%)	19 (76%)	
Indirect	7 (28%)	6 (24%)	0.552 (N.S)
Both	1 (4%)	0 (0%)	
<b>Co-morbidities</b>			
<b>Present</b>	13 (52%)	18 (72%)	0.145 (N.S)
Obesity	3 (12%)	5 (20%)	
Diabetes mellitus	5 (20%)	6 (24%)	
Chronic obstructive	2 (8%)	3 (12%)	
Pulmonary disease	2 (8%)	3 (12%)	
Smoking	1 (4%)	1 (4%)	
<b>Absent</b>	12 (48%)	7 (28%)	

[Table/Fig-1]: Clinical features.

The average operative time was longer for group II but not significantly higher. The mean length of hospital stay was considerably longer in Group II [Table/Fig-2]. Patients in both groups had minor complication of bleeding, urinary tract infection and wound infection {Group I, n=4 (16%); Group II n=7 (28%)} but found to be insignificant between groups [Table/Fig-3]. Wound infections and urinary tract infection were followed with culture and antibiotic therapy was prescribed, if required. Group I underwent TURP and inguinal hernioplasty at the same time required only one admission and a single anaesthesia whereas and the second group underwent TURP followed by inguinal hernioplasty as two separate procedures and hence had to get admitted twice and undergo anaesthesia twice.

	Group 1 (n=25)	Group 2 (n=25)	p-value
Mean Operative time (minutes)	143.40±23.836	147.64±15.413	0.069 (N.S)
Mean Length of hospital stay (days)	6.04±2.051	9.44±1.557	0.004
Prostate volume (cc)	48.66±7.172	32.34±32.654	0.018
PVR (mL)	223.64±46.644	190.84±44.534	0.014

[Table/Fig-2]: Mean operative time and hospital stay duration for both group.

Complications	Group 1	Group 2	p-value
Nil	21 (84%)	18 (72%)	
Bleeding	1 (4%)	0 (0%)	
Clot retention	1 (4%)	2 (8%)	0.499 NS
Urinary tract infection	1 (4%)	4 (16%)	
Wound infection	1 (4%)	1 (4%)	

[Table/Fig-3]: Complications after surgery.

## DISCUSSION

The study found a majority of the patients belonging to the seventh decade of life followed by sixth. The frequency of histologically diagnosed prostatic hyperplasia increases with age and account for 40% to 50% in 51-60 years aged men which may increase up to 80% in older aged men [3-7].

In the present study, the mean operative time in combined procedure (Group I) was 143.40: 147.64, which correlates with the study done by Cimentepe E et al., (146.4:135.0) and Ibrahim MM (134.6:126.5) [17,24]. The mean operative time found in our study correlates with western studies as well [19-21]. The mean operative time quite similar in these studies indicates that although facilities might differ in various set up the combined procedure seems to have edge on individual procedure. In our study, the mean length of hospital stay was 6.04 in Group I and 9.44 in Group-II, comparable to the study by Ibrahim MM 3.07 in Group I and 4.07 in Group II [24]. Dahami Z et al., 2009 reported good outcomes in 86% of the patients with morbidity rate of 10.7%, and mean hospital stay was varied from 2 days to 8 days. None of patients reported for recurrent of inguinal hernia. Morbidity rate in the present study was very similar to his study whereas the mean hospital stay was in same range [25]. Another study reported no significant difference in postoperative complications between study and control group and suggested that combined operation decrease the number of anaesthesias, hospital stay, and thus health costs without causing increase in postoperative morbidity [26].

The present study population in Group 1 had mean prostate Volume (cc) of size 48.66 cc and in Group II had a prostate volume of size 32.34 cc which was significant. Also, post void residual urine in Group 1 had mean of 223.64 mL which was significantly higher than Group II which had mean post void residual urine of 190.84 mL. Results of the present study are quite similar to Cimentepe et al. who studied 94 patient in two groups and stated no differences in the mean age and mean prostatic volume between two groups [17].

## LIMITATION

The outcome of any surgery also depends upon the facility available in the region and hospital process. This is first study from southern Indian region which may be required to compare with other studies performed in various different setup. The limitation was quite small sample size although it was a significant number however a larger number of patients would make sure that small factors do not impact the study outcome.

## CONCLUSION

Maximum number of patients belonged to the seventh decade. Patients in Group I had lesser hospital stay when compared to

Group II patients in the present study. Complications were found to be same in both the study groups. Combined TURP and inguinal hernioplasty is a safe and effective operative procedure.

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