Journal of Saidu Medical College 2012; 2(1)

VIDEO TURP: SURPASSING THE GOLD STANDARD

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ABSTRACT

Objectives: To compare the resection time and resected volume of the prostate in patients who were subjected to video Trans-urethral resection of prostate (TURP) and conventional TURP, and to determine the difference in the duration of bladder irrigation during post-operative period for conventional TURP and video TURP.
Study Design: Comparative randomized control study.
Methods: The study was conducted in the Department of Urology at Pakistan Institute of Medical Sciences (PIMS) Islamabad from 1st March 2002 to 28th February 2003. Total number of 100 patients were equally divided into two groups. Group 'A' comprising of 50 patients *(Control)* were subjected to Conventional TURP and Group 'B' comprising of 50 patients *(Case)* were subjected to video TURP respectively. The sample was randomized by the last digit of the hospital admission number, *Even* number was allocated to group 'A' and *Odd* number to group 'B'. The data was recorded on structured proforma and was analyzed on SPSS.
Results: The mean age of the patients was 65.5 years with the range of 42-96 years. The Mean resection time for conventional TURP was 36.03 minutes and for video TURP was 37.27 minutes (*P value = 0.068*). The mean resected volume for conventional TURP was 18.5 gm and for video TURP was 23.65gm (*P value = 0.01*). The post operative irrigation of the bladder with 0.9% saline was required for 3.32 days in conventional TURP, while it was required for 1.57 days in video TURP ($P < 0.05$). There was no TURP syndrome recorded in both the groups and the mean hospital stay for both the group was equal i.e. 4th Post operative day as per protocol of our department.
Conclusion: The video TURP has opened up a new Approach in endourology. It is more effective in resection than conventional TURP and bears the same safety of resection time as conventional TURP.
Key Words: Prostate, TURP, Endourology, Video TURP

INTRODUCTION

Prostate is a male sex organ located beneath the bladder neck and rests upon urogenital diaphragm with the approximate weight of 20 gm. Prostate is involved in a variety of diseases like Benign Prostatic hyperplasia, adenocarcinoma prostate, prostatitis etc.[1] Benign prostatic hyperplasia (BPH) is the most common benign tumor in men and its incidence is age-related. The estimated prevalence is 25 % in men aged 40 to 79 years.[2] There are a number of modalities for the treatment of urinary bladder outlet obstruction due to BPH, however the aim of treatment is to improve the quality of life as well said by Aristotle "Quality of life is more important than life itself".

The frequency of open prostatectomy has gradually decreased since late 70s after development and widespread use of endoscocpic equipments.[3] Transurethral resection of the prostate (TURP) is still the gold standard for treatment of BPH. TURP is as efficient as open prostatectomy, less invasive, less expensive and with less morbidity, thus it has become the gold standard for the treatment of BPH.[4] When we reviewed the historical background of endoscopic urology, we found that the desire to peep in to the cavities of the human bodies is not new. It was first attempted several centuries ago. Hippocrates was the first who designed a rectal speculum 460 years BC. It was in 1805 when German obstetrician Philip Bozzini described the first illuminated cystoscope and named it as litchieiter.[5] McMillan

Nitze in 1893 became a pioneer in the development of modern and more advance cystoscope.

The formal camera was used in 1930 for taking the endo-urological photographs. The TV camera was first started for the recording of an operation in 1950 and the video TURP was started in 1980.[6]

In the video TURP A mini-chip camera is attached to the lens system of a continuous-flow resectoscope. A television monitor provides reliable guidance for the cutting loop when resection is necessary for the treatment of benign hypertrophy, carcinoma of the prostate or carcinoma of the bladder. The surgeon stands in a comfortable position with both eyes on the screen and performs tissue-orientated TURP due to 50-times enlargement of the image[7].

The video TURP has brought a new vision in the field of endourology. It is equally beneficial for the patients, the surgeon and the postgraduate residents.[8,9] It is beneficial for the patient as TURP has been freed from much of its mystique by adding the camera technology. More over the recordings of the operations can be given to the patients for referrals to other hospitals especially in cases of uro-oncology[5].

There are several studies which indicated that Video TURP is comfortable for the surgeon as it is associated with lesser strain on the neck and eyes as compared to the conventional TURP.[6] Video TURP also provides adequate safety to the surgeon against the dangerous viruses like human immunodeficiency virus (HIV), hepatitis B virus (HBV), and hepatitis C virus (HCV)[7].

Video TURP is the best way of instruction for the post graduate residents who are planning to appear in fellowship examination in the field of urology. It is also helpful in the presentation of this technique in surgical workshops and conferences.[8]

Despite all these advantages, there are few studies about the effectiveness of video TURP in terms of more resection and safety in terms of resection time[7].

The department of Urology PIMS Islamabad has the privilege to be the pioneer in starting such innovative procedures in Pakistan since late 90s. The endoscopic interventions that are routinely performed by video-control in the department of Urology PIMS includes TUR of prostate, TUR of bladder-tumors, ureteroscopies, manipulations with bladder stones and stents, optical urethrotomies, diagnostic cystoscopies and percutaneous nephrolithomies. The current study is performed to determine the safety and efficacy of video TURP and to share our experience in performing video TURP.

MATERIAL AND METHODS

Objectives:
To compare the resection time and resected volume of the prostate in patients who were subjected to video Trans urethral resection of prostate (TURP) and conventional TURP, and to determine the difference in the duration of bladder irrigation during post-operative period for conventional TURP and video TURP.

Study Design:
Comparative, Randomized control study

Study duration:
1st March 2002 to 28 February 2003

Settings:
Department of Urology at Pakistan Institute of Medical Sciences (PIMS) Islamabad.

Sample size and sampling technique
Total numbers of 100 patients were collected at random in two equal groups

Inclusion & Exclusion criteria
All the patients with the ultrasound prostatic weight of 40-60gm were included in the study, while patients with preexisting urethral stricture, vesical calculus and bleeding diathesis (causing bias in resection time) were excluded from the study

Data collection procedure and Analysis

All the patients admitted for TURP with in the study time, fulfilling the afore mentioned criteria and have consented for selection in the study were included.

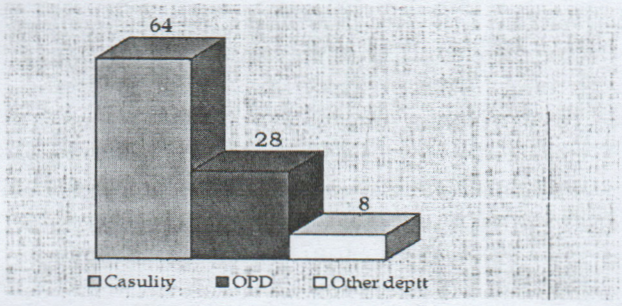
Patients were equally divided into two groups. Group 'A' comprising of 50 patients (Control) was subjected to Conventional TURP and Group 'B' comprising of 50 patients (Case) was subjected to video TURP respectively. The sample was randomized by the last digit of the hospital admission number, *Even* number was allocated to group A, and *Odd* number to group 'B'. The same surgeon performed both the operations.

The data was collected on structured proforma and was analyzed on SPSS. Paired sample t-test was applied to check significant difference among different variables.

RESULTS

Total number of patients was 100. The mean age of the patients was 65.5 years with the range of (42-96) years. The mean age of the patients was almost similar in both the groups i.e. Group A (66.38 years) and Group B (64.78 years) respectively.

The mode of presentation for the first time to different department is shown in Fig: 1.



Majority of the patients (55) presented with urinary retention while 39 with lower urinary tract symptoms (LUTs) and 03 patients presented with haematuria due to prostate while 4 patients had obstructive uropathy due to enlarge prostate

The mean weight of the prostate in Group 'A' (Control) was 50.62 gm, while in Group 'B' it was 52.67 gm. Regarding the types of anesthesia, 32 patients were operated under General anesthesia while 68 patients were operated under spinal anesthesia. Total number of 7 patients required blood transfusion, amongst which 5 patients from Group A (Conventional TURP) and 2 patients from Group B(Video TURP) required blood transfusion.

The mean resection time in conventional TURP was 36.03 minutes and for video TURP was 37.27 minutes (*P value = 0.068*). The mean resected volume for conventional TURP was 18.5 gm and for video TURP was 23.6gm (*P value = 0.01*).

The post operative irrigation of the bladder with 0.9% saline was required for 3.32 days in conventional TURP, while it was required for 1.57 days in video TURP ($P < 0.05$).

There was no TURP syndrome recorded in both the groups and the mean hospital stay for both the group was equal i.e. 4th Post operative day as per protocol of our department.

DISCUSSION

The present study has shown that the video TURP is a new approach in endourology. It is a safe and effective procedure for the patients with enlargement of prostate.

The strength of our study is that it is a randomized case control trial conducted for the first time in Pakistan. The weaknesses of our study are; that the sample size for both the groups is small. More over the long term follow up is also lacking to establish the late complications of both the procedures.

The majority of the studies, among few which are conducted on this topic, state that statistically there is no significant difference in resection time and resected volume for conventional and video TURP [9,10,11] Our study has shown that the mean resection time was almost equal in both the groups (*P value = 0.068*), which means that the video TURP is a safe procedure and bears the same risk of TURP syndrome as conventional TURP [12]. In contrast to the statement published in the literature about resected volume, Our study has shown that there is significant difference in terms of more resection of prostate in favor of video TURP (*P value = 0.001*).Our this finding is also supported by Yassine Nouira & Colleagues [13]. This more resection of prostate volume invaluably helps in greater chances for detection of carcinoma of prostate.

In the post operative period it was found in the present study that patient who underwent video TURP required lesser duration for bladder irrigation i.e. a mean of 1.57 days as compared to patients in conventional TURP who had continuous bladder irrigation for 3.32 days ($P < 0.05$).This significant difference was also noted by Yassine Nouira & Colleagues [13]. There was no TURP syndrome recorded in both the groups. However literature quotes this complication by almost 2% in different multicentric trials. In the present study, the rate of blood transfusion was also less in video TURP than conventional TURP which is in accordance with international literature[14].

The literature has also reported a significant decrease in the mean hospital stay with video TURP due to better hemostasis and early discontinuation of bladder irrigation as compared to the conventional TURP [12,14]. However in our study the mean hospital stay was equal for both the groups i.e. 4th Post operative day, which is the protocol followed in our department for TURP.

Our study is implicated for the patients, urologists and postgraduate residents, as the video TURP has definitely raised the gold standard. And the growing importance of this innovative procedure is yet to be realized.

We found some unanswered questions during our study like the major percentage 55% of patients presented with urinary retention which is very high than the percentage (8-10%) that is written in literature. So further research is needed to determine the factors for this high prevalence of urinary retention due to enlargement of prostate

CONCLUSION

Video TUR is a new and convenient technique of transurethral surgery in which resection is performed under visual control provided by a camera and a monitor.

With video TURP, we resected larger prostate glands with minimal intraoperative and postoperative bleeding, better hemostasis with similar safety profile of resection time as conventional TURP.

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