



Study of Freyer's Prostatectomy in Bph with Special Reference to Modified Management Plan (Early Removal of Catheter) and Haemorrhage

KEYWORDS

Freyer's Prostatectomy, Transabdominal Ultrasonography, Prostate Weight

Dr Pankaj Singh

Senior Resident, Department of Emergency Medicine, Lohiya Institute of Medical Sciences, Lucknow

Dr Dinesh Pratap

Professor (Retired) Department of general surgery MLB Medical College, Jhansi

ABSTRACT

Objective: This study was planned to remove penile catheter on 4th postoperative day and to assess urinary flow, unless it is contraindicated due to suprapubic leak and to evaluate the weight of resected tissue of Prostate.

Methods: This study is a prospective follow-up study conducted on 186 patients. Patient was prepared for Transabdominal Ultrasonography. For this, the bladder was distended with fluid or Urine prior to the Ultrasonography. The transducer (usually 3.5-5.0 Mhz) was placed just superior to the symphysis pubis and angled caudally to visualize the prostate and volume of prostate was calculated by taking dimension longitudinal and transverse images were obtained to note the prostatic tissue surface, echotexture and volume.

Results: Nearly one third of the patients were between 61-65 years (29%). The grade III weight of prostate in USG was in 37.1%. The median percentage of weight of tissue enucleated in MFP was more than 50% of Ultrasonographic weight. The bleeding that occurred during open prostatectomy perioperative which was on average in grade 1 was 32 ml and primary about 16 ml and there was no secondary hemorrhage. Preoperative bleeding was measured by counting the soaked gauze pieces.

Conclusion: In modified postoperative management, penile catheter can be removed on 4th postoperative day without any unforeseen complication hence making MFP further acceptable.

INTRODUCTION

Benign prostatic hyperplasia is the most common benign tumor in men and its incidence is age related (Swapnil Madankar, Vijay Kanake, 2015). BHP is theoretically the detection of prostatic hyperplasia, which is the benign proliferation of the stroma and epithelium, by histological study. However histological studies for all men are unfeasible in clinical practice, so BHP usually refers to the palpable enlargement of the prostate, which can be detected by clinical or ultrasonographic examination, or presence of urinary symptoms loosely defined as lower urinary tract symptoms (LUTS), which are usually classified as obstructive or irritative (Levy and Samraj 2007).

Benign prostatic hyperplasia is characterized by the non-malignant overgrowth of prostatic tissue surrounding the urethra, ultimately constricting the urethral opening and giving rise to associated lower urinary tract symptoms (McVary, 2006; Wei et al, 2008).

Surgery for BPH has evolved from the days of perineal approach to currently popular transurethral resection. Until 20-25 years ago, while open surgery was the most common approach, in the late 1970s, the development of endoscopes gradually reduced the open surgical operations (Mearini et al, 1998). The ratio of open surgery to endoscopic resection has large variations among different countries and even among the various areas of vast country like India. Although TURP is considered as the gold standard, it is still out of reach for a vast majority of rural population due to the unavailability of expertise or equipment's.

Freyer's Prostatectomy is discredited with having longer hospital stay, its fall out and for increased morbidity. In order to reduce the hospital stay and morbidity, this study was planned to remove penile catheter on 4th postopera-

tive day and to assess urinary flow, unless it is contraindicated due to suprapubic leak and to evaluate the weight of resected tissue of Prostate.

MATERIAL AND METHODS

This study was conducted on 186 patients who were admitted in the surgical wards of MLB Medical College and Hospital, Jhansi during with symptomatology of BPH. The study was approved by the Ethical Committee of the College. The consent from each patient was taken after explaining the purpose before enrolling in the study. Patients of different age group 50-70 years were included in the study. The history and detailed examination was done and findings were recorded.

Investigation

Patient was prepared for Transabdominal Ultrasonography. For this, the bladder was distended with fluid or Urine prior to the Ultrasonography. The transducer (usually 3.5-5.0 Mhz) was placed just superior to the symphysis pubis and angled caudally to visualize the prostate and volume of prostate was calculated by taking dimension longitudinal and transverse images were obtained to note the prostatic tissue surface, echotexture and volume. The formula for taking Prostatic volume was:

The volume of the gland (in ml) = length x max transverse x A-P diameter x 0.52

For prostate 1ml = 1gm. The specific gravity of Prostatic tissue was about 1). After size evaluation, the post void residual volume was also measured.

Prostate gland was graded depending on the endoscopic finding of the prostatic Urethra, median lobe, and details of the prostatic gland on rectal examination, in addition to

Ultra sonographic assessment. (Grade I : 15-25gm, Grade II: 25-50 gm, Grade III 50-75gm and Grade IV: more than 76gm).

Then the patient was undergone for modified Freyer's Prostatectomy operation after full anesthetic evaluation. The prostates tissue was thus enucleated and removed tissue was then weighted and sent for biopsy.

Patients were then thoroughly followed up in post operative period for any complication till their discharge from the hospital and after removal of catheter in further follow ups for any late complication. The descriptive statistics such as mean±SD and percentages were calculated and presented.

RESULTS

A total of 186 patients undergone modified Freyer's prostatectomy with the Ultrasonographic evaluation of prostatic weight and post void residual volume. The catheter was removed on 4th postoperative day in 176 patients.

Nearly one third of the patients were between 61-65 years (29%). The grade III weight of prostate in USG was in 37.1% followed by grade IV (32.3%) (Table-1).

The median percentage of weight of tissue enucleated in MFP was more than 50% of Ultrasonographic weight between 15-25, 51-75 and >76 gm (Table-2).

Table-3 describes the post operative complication in different wt. range of Prostate in USG after removal of catheter on 4th post operative day. In rest 12 cases, catheter was not removed on 4th pop day because of various reasons. It was left there for more than 4 days in 10 patients due to chances of suprapubic leak and in two of patients, the catheter was accidentally out before 4th postoperative day (Table-3).

The bleeding that occurred during open prostatectomy peroperative which was on average in grade 1 was 32 ml and primary about 16 ml and there was no secondary hemorrhage. In grade 2, the peroperative bleeding was about 38 ml and primary bleeding was about 22 ml and none of patient shown secondary hemorrhage. In grade 3, peroperative bleeding was about 33ml average and primary hemorrhage was about 25 ml and no secondary hemorrhage was found. In grade 4, BPH peroperative bleeding was about 36 ml on average, primary hemorrhage was about 28 ml (average) and one patient showed secondary hemorrhage of about 25 ml. Preoperative bleeding was measured by counting the soaked gauge pices and sponges. The sponge was squeezed and the amount of the blood was measured. Measurement of bleeding was also calculated by amount of blood present in suction pump (Table-4).

DISCUSSION

McGill and Belfield described suprapubic transvesical partial enucleation of prostate in late 1800s. Fuller and Frayer popularized the technique of complete enucleation of gland (Stutzman and Walsh, 1992). However, hemostasis from this procedure was far from satisfactory as bleeders were not directly visible. The concept of control of hemorrhage by separation of the bladder neck from the prostate fossa was presented by Lower and Harris using non absorbable bladder neck sutures (Stutzman and Walsh, 1992). Hryntschak modified and popularized the technique in 1951. Dela Pena and Alcina proposed separation of bladder cavity from the prostate fossa using a removable purse

string suture in 1962 (Stutzman and Walsh, 1992). Malement popularized the removable partition suture, which is recommended only in cases of excessive bleeding in textbooks (Meier et al, 1995; Han et al, 2002).

The present study on evaluation of Modified Freyer's Prostatectomy with special reference to tissue enucleated was carried out in 186 patients. Mostly patients were in Age range of 56 years to 70 years. Among them, the cases were divided according to prostatic weight in Ultrasonography in different grades. Most of the cases were in the grade II and grade III enlargement of prostate. In grade I prostate on Ultrasonography (15-25gm), the median weight of tissue enucleated was 14 gm which had median percentage of 59.2%. These cases includes median lob enlargement. In grade II prostate enlargement (26-50gm) which included maximum cases. The median weight of tissue enucleated was 21 gm which had median percentage of 47.4%. In grade III prostate enlargement (51-75gm), the median weight of tissue enucleated was 32.4 gm which had median percentage of 53.2%. In grade IV Prostate enlargement, more than 76 gm which was absolute indication of open Prostatectomy, the median weight of tissue enucleated was 54 gm which had median percentage of 58.7%.

Randomized study available in the literature does not support such a view. In a randomized study of TURP versus open prostatectomy, Meyhoff et al (1984) showed no difference in the weight of the resected tissue (23.4 versus 27.0g, respectively). It could be argued that the lower re-treatment rate following open prostatectomy suggests a more complete removal of the hyperplastic tissue as compared to TURP, but no solid data exists to support this opinion.

Usually the catheter is removed on 7th postop day in cases of open prostatectomy. But in present study, the catheter was removed on 4th post operative day. In 176 patients out of 186, the catheter was removed on 4th postoperative day. Out of them, 164 patients did not develop any problem in postoperative period and were discharged satisfactorily. Complication rate was <1% which seemed acceptable. Only 5 (0.3%) patients went into retention. Two of them were recatheterised and one voided after a period of 7days. Four patients were discharged satisfactorily but next day they came in OPD with retention and was also catheterized. These patients were managed accordingly and also their results were good when they were discharged. Five (0.3%) patients developed suprapubic leak which could multifactorial, might be because of poor healing in part of patient and urinary infection. All managed conservatively and in 3 of them leak was closed within a period of 15 days.

Two (0.15%) patients suffered from incontinence which may be multifactorial. Two patients that suffered from incontinence were those patients having significant dribbling. There was stricture formation in one patient in follow up period. In this study, none of patient suffered from any significant postoperative hemorrhage.

The results of this study, though from a smaller group of patients, compared well with those reported by Meier et al (1995). There was low complication rate in this study. Nadu et al (2004) noted significantly higher complication rates in undergoing open prostatectomy. The late complication rate are similar to other series (Lezrek et al, 2003). Condie et al (1999) reported an 8% early complication, with 2

deaths, in a study of 200 patients, while Meier et al (1995) had a complication rate of 19.6%, with no deaths. Ceylon (2006) reported a 35% overall complication rate. Whereas, Hill and Njoroge, (2002) reported a 0.9% mortality rate in 2002, there were no deaths in this study. Condie et al (1999) and Meier et al (1995). discontinued urethral catheters on the seventh post-operative day.

In Modified Freyer's Prostatectomy, the tissue enucleated is approximately half of its Ultrasonographic weight. More the weight of Prostate in Ultrasonography, more is enucleation of tissue.

CONCLUSION

In modified postoperative management, penile catheter can be removed on 4th postoperative day without any unforeseen come shot hence making MFP further acceptable.

Source of funding: None

Conflict of interest: None

Table-1: Baseline characteristics of the patients

	No. (n=186)	%
Age in years		
45-50	02	1.1
51-55	12	6.5
56-60	38	20.4
61-65	54	29.0
66-70	50	26.9
71-75	14	7.5
75-80	12	6.5
81+	04	2.2
Weight of prostate in USG (in gms)		
15-25gm (Grade I)	13	7.0
26-50gm (Grade II)	44	23.7
51-75gm (Grade III)	69	37.1
>76 gm (Grade IV)	60	32.3

Table-2: Median tissue enucleated and Median % of tissue enucleated in different USG wt. group

	Median wt. of tissue nucleated in MFP (gm)	Median Percentage of wt. of tissue enucleated in MFP
15 - 25 gm	14gm	59.2%
26 - 50 gm	21gm	47.4%
51 - 75 gm	32.4 gm	53.2%
> 76 gm	54 gm	58.7%

Table-3: Post operative complication in different wt. range of Prostate in USG after removal of catheter on 4th post operative day

Wt. range of Prostate in USG (in gm)	No of patient	Satisfactory	Retention	Su-prapubic leak	Dribbling	Stricture formation	In-continnence
15-25	11	10	01	--	--	--	--
26-50	42	39	02	01	01	--	--
51-75	69	65	01	01	03*	01	01*
> 76	54	50	--	03	02(1*)	--	01*
Total	176	164	04	05	06(2*)	01	02*

*same patient developing both complications.

Table-4: Peroperative bleeding in different weight range of prostate

Weight range of prostate in ultrasonography(gm)	No. of patients	Peroperative bleeding ml (average)	Primary/reactionary ml (average)	Secondary (ml)
15-25	13	32	16	-
26-50	44	38	22	-
51-75	69	33	25	-
>76	60	36	28	25
Total	186			

REFERENCE

Ceylan K. Open Prostatectomy: The Results of a series of 320 cases in a Rural Area. Eur J Gen Med. 2006; 3: 11-5. Condie JD, Cuthrell L, Mian A. Suprapubic prostatectomy for benign prostatic hyperplasia in rural Asia: 200 consecutive cases. Urology. 1999; 54: 1012-6 Han M, Alfort HJ, Partin AW, Walsh PC, Retik AB, Vaughan ED, et al. Retro-pubic and supra-pubic open prostatectomy. In: Han M, Alfort HJ, Partin AW, Walsh PC, Retik AB, Vaughan ED Jr, et al., eds. Campbell Urology. 10th ed. Philadelphia: Saunders Co; 2002: 1423-1434. Hill AG, Njoroge P. Suprapubic transvesical prostatectomy. East Afr Med J. 2002; 79: 65-7. Levy, A. and G. P. Samraj. Benign prostatic hyperplasia: when to 'watch and wait,' when and how to treat. Cleve Clin J Med. 2007; 74 Suppl 3: S15-20. Lazrek M, Ameur A, Renteria JM, El Alj HA, Beddouch A. Modified Denis Technique: a simple solution for maximal hemostasis in suprapubic prostatectomy. Urology. 2003; 61: 951-5. McVary, K. T. BPH: epidemiology and comorbidities. Am J Manag Care. 2006; 12(5 Suppl): S122-128. Mearini E, Marzi M, Mearini L, Zucchi A, Pornea M. Open prostatectomy in benign prostatic hyperplasia: 10-year experience in Italy. Eur Urol. 1998;34:480-5. Meier DE, Tarpley JL, Imediegwu OO, et al. The outcome of suprapubic prostatectomy: a contemporary series in the developing world. Urology. 1995; 46: 40-4 Meier DE, Tarpley JL, Obioha O. The outcome of supra-pubic prostatectomy: a contemporary series in the developing world. Urology. 1995; 46:40-4. Meyhoff HH, Nordling J, Hald T. Clinical evaluation of transurethral versus transvesical prostatectomy. A randomized study. Scand J Urol Nephrol. 1984; 18:201-9. Nadu A, Mabjeesh NJ, Ben-Chaim J, Kaver I, Matzkin H, Greenstein A. Are indications for prostatectomy in octogenarians the same as for younger men? Int Urol Nephrol. 2004; 36: 47-50. Stutzman RE, Walsh PC. Suprapubic and retro-pubic prostatectomy. In: Walsh PC, Retik AB, Stamey TA, Vaughan ED Jr, eds. Campbell Urology. 6th ed. Philadelphia: W.B. Saunders Co; 1992: 2851-2856. Swapnil Madankar, Vijay Kanake. Modified technique in Freyer's prostatectomy to achieve hemostasis. Int Surg J. 2015; 2(4):609-611. Wei, J. T., E. Calhoun, et al.. Urologic diseases in america project: benign prostatic hyperplasia. J Urol. 2008; 179(5 Suppl): S75-80.