

A Comparative Study of Post Operative Complications of Open Prostatectomy (Fryer's) Versus Trans Urethral Resection of Prostate

Sagarkumar Gupta, Mehul I Solanki and Honeypalsinh H Maharaul*

Department of General Surgery, S.B.K.S.M.I.R&C Pipariya, Vadodara, Gujarat, India

***Correspondence Info:**

Dr. Honeypalsinh H. Maharaul

Assistant Professor

Department of General Surgery

S.B.K.S.M.I.R&C Pipariya, Vadodara, Gujarat, India

E-mail: mailhanipal_19@yahoo.com

Abstract

Aims & objectives: To compare post-operative complications between open prostatectomy (FREYER'S) and T.U.R.P.

Material and Methods: Patients, who were candidates for prostate surgery & had been referred to urology outpatient clinic in our hospital between December 2011 to September 2013, were enrolled for the study. These patients were then divided in two groups – A and B randomly, by using the process of randomization. Group A comprised of patients for open prostatectomy and Group B of patients for T.U.R.P.

Conclusion: In expert hands and with proper monitoring facilities TURP is the best method of prostatectomy for small glands. However in a country like ours where all ideal facilities are not available freyer's method will still be widely practiced for long periods.

Keywords: Open Prostatectomy (Freyer's), TURP (Trans Urethral Resection of Prostate).

1. Introduction

Benign enlargement of the prostate occurs in the males over 45 years of age. Urinary retention due to prostatic disease is a major geriatric problem. Open transvesical prostatectomy i.e. freyer's (OP) and transurethral resection of the prostate (TURP) are two old surgical procedures performed for patients with benign prostatic hyperplasia (BPH). Currently, TURP is considered as the reference or standard treatment for the prostate less than 70 to 80 g [1-3] Nevertheless, OP is still being performed for operations of the prostates that are candidate for TURP in many developing and even developed countries, as the percent of OP in the late 1990's and early 2000 in Sweden [4], France [5], Italy [6], and the Mediterranean coasts [7] ranged from 14% to 40%. In the 21st century, with advances in surgical methods and anaesthesia, the complications of OP have decreased relative to the reports of the old times. Besides, patients are satisfied with OP regarding its functional outcome and durability. Open transvesical prostatectomy is not currently recommended for moderate-sized prostates.

While, as mentioned above, a large percent of such operations are performed through the open

approach. Some authors considered comparing OP with newer methods unethical [8] while there has not been good quality evidence for the comparison of OP with TURP.[3,9] We aimed to compare the post-operative and short-term complications of OP(freyer's) and TURP

2. Materials and methods

Patients, who were candidates for prostate surgery & had been referred to urology outpatient clinic in our hospital between December 2011 and September 2013, were enrolled for the study. These patients were then divided in two groups – A and B randomly, by using the process of randomization. Group A comprised of patients for open prostatectomy and Group B of patients for T.U.R.P. Indications for the prostate surgery included lower urinary tract symptoms despite maximal medical therapy, frequent urinary tract infections, haematuria unresponsive to medical therapy, high serum creatinine that decreased with urethral catheter placement, and urinary retention despite medical therapy. Taking the history and physical examination, including digital rectal examination, Laboratory

evaluations included serum level of creatinine, serum level of prostate-specific antigen (PSA), urine analysis, and urine culture. Ultrasonography of kidneys, the bladder, and the prostate were also performed. Thereafter, patients were referred for transrectal Ultrasonography of the prostate to assess the prostate size. Patients with high serum level of PSA underwent transrectal ultrasound guided biopsy of the prostate (5 cores from each lobe). Patients with a suspicious mass in digital rectal examination, history of the prostate operation, the prostate size outside the range of 30 to 80 g in transrectal Ultrasonography, and those with pathology report other than BPH in transrectal prostate biopsy were excluded from the study. Finally, 100 patients remained for the analysis.

Data were collected during the operation, postoperative hospitalization, and when patients referred to the clinic at 1 to 2 months postoperatively. In this immediate post operative complications included are bleeding, clot retention, re-exploration, turp syndrome, UTI, secondary haemorrhage, wound infection, epididymitis, supra-pupic leak, and delayed post operative complication included are retrograde ejaculation, retention, incontinence, decrease urinary stream, erectile dysfunction, stricture.

This study was approved by the human Ethical Committee. All the patients were informed about the study objectives and interventions. A written informed consent was obtained from each patient. Statistical analysis was done of this study.

3. Results and Discussion

Open transvesical prostatectomy is currently regarded as the only procedure that completely relieves prostatic obstruction. [2,9,56] It is usually used for large prostates or when another pathology necessitating open intervention such as multiple bladder stones coexists.[56] Previously, TURP was the most commonly used operation for obstruction relief and accounted for 60% to 97% of the prostate operations.[4-7,58] The use of OP is now mostly confined to less developed countries with little expertise or experience in endoscopy.[58] Currently, laser vaporization technology and Holmium laser enucleation of the prostate are revolutionary techniques with little morbidity and equivalent success to OP or TURP, and are promising to be the new gold standard treatments of BPH, irrespective of the prostate size.[60-62] But the main drawbacks for laser technology are its high cost and difficult

learning curve[61,62] that make it unsuitable. Currently, few centres in the Middle East offer Holmium laser enucleation of the prostate. Transurethral resection of the prostate has been declared as the reference or standard treatment for the prostates less than 70 to 80 g[1-3,63]; however, it has been clearly stated that TURP has not passed the formal pathways of a new surgical method evaluation and its comparison with OP has been based on retrospective, open, and single centre series[3]. Since the indications for TURP and OP are different, best comparisons are possible only through randomized controlled trials (RCT).[54] in this study Out of the total 100 patients, 50 patients underwent freyer's prostatectomy and 50 underwent TURP, by randomized control study

In the present study patients undergoing prostatectomy, were from peak age group of 61-70 years. These figures are similar to those reported by Ahmed [64] East Africa 1979: 2: 12-14.). [65].

3.1 Per operative complications

There were not a single complication like severe bleeding, capsular perforation, bladder perforation, or rectum injury noted in this present study. there is 6. 3% rate of bladder perforation encountered Dr. D. K. Kiptoon[65].

3.2 Post operative complications

Post operative complications were divided into two groups Immediate and Late complication. In this immediate post operative complications included are bleeding, clot retention, re-exploration, turp syndrome, UTI, secondary haemorrhage, wound infection, epididymitis, supra-pupic leak ,and delayed post operative complication included are retrograde ejaculation ,retention, incontinence, decrease urinary stream, erectile dysfunction, stricture.

3.2.1 Immediate

Post operative bleeding

In **present study** there were 8% of cases **had post** operative bleeding in freyer's prostatectomy and 12% of cases **had post operative bleeding in TURP**. All **patients** were treated by giving blood transfusion. P value is non significant in present study. In the study of Lynch M *et al*[68] there were only 4% of cases had post operative bleeding in TURP.

The study of Oranusi CK *et al* [66] there were 18% of cases had post operative bleeding in freyer's prostatectomy, so in present study there less complication in o.p. compare to other study.

Table 1: Immediate post operative complication

Immediate (1 to 7 Days)	Freyer's	Percentage (%)	TURP	Percentage (%)	Z value	P value
Bleeding	04	08	06	12	0.7	NS
Clot Retention	06	12	04	08	0.7	NS
Re-Exploration	02	04	00	00	1.4	NS
Turp Syndrome	00	00	05	10	2.3	<0.05
UTI	08	16	17	34	2.1	<0.05
Secondary Haemorrhage	07	14	03	06	1.3	NS
Wound Infection	14	28	00	00	4	<0.0001
Epididymities	00	00	09	18	3.1	<0.01
Supra Pubic LEAK	08	16	00	00	2.9	<0.01

Clot retention

In present study 12% cases noted of clot retention in freyer's prostatectomy and 1.4 % post operative clot retention noted in freyer's, in the study of Oranusi CK *et al* [66]. In present study 8% cases noted of clot retention in TURP and 0% in open prostatectomy in the study of Nasser Simforoosh *et al* [67], there were 12% of cases of clot retention. P value is non significant in present study.

Re-exploration

In present study 4% cases of freyer's prostatectomy needed re exploration because of clot retention and 0% Cases noted in TURP. In the study of Nasser Simforoosh *et al* [67], there were 16% of cases of TURP needed reexploration and 0% of open prostatectomy. 1.4 % cases of freyer's needed reexploration in the study of Oranusi CK *et al* [66] Department of Surgery, Nnamdi Azikiwe University Teaching Hospital, Nnewi, Anambra State, Nigeria. P value is non significant in present.

TURP syndrome

In the present study 10% cases of TURP noted of TURP syndrome .P value <0.05 and z value is 2.3.

UTI

In the present study 16% cases of UTI noted in patient underwent freyer's prostatectomy and 34% cases of UTI noted in TURP more incidence of UTI in TUR is due to instrumentation of urethra. Also eyepiece of resectoscope is potential source of infection.

In the study of Nasser Simforoosh *et al* [68], there were 4% cases of UTI noted in TURP, and 4% cases of UTI noted in open prostatectomy. All the patients of UTI were treated with antibiotic according to culture and sensitivity report of urine.

Secondary haemorrhage

In the present study 14% cases of secondary haemorrhage noted in freyer's prostatectomy and 6% cases of secondary haemorrhage noted in TURP. Secondary haemorrhage was due to urinary tract infection. P value of this study was non significant.

In study of Zameer Hussain Laghari⁽⁷⁰⁾ there were 12.5% cases noted in open prostatectomy.

Wound infection

In the present study 28% cases of wound infection noted in freyer's prostatectomy. Pre operative UTI, catheterization, greater frequency of bladder wash and longer haematuria are commonly found to be associated. All the patients of wound infection were treated with appropriate antibiotic according to swab culture sensitivity report and daily dressing.

In the study of Oranusi CK *et al* [66], Department of Surgery, Nnamdi Azikiwe University Teaching Hospital, Nnewi, Anambra State, Nigeria had 6.9% cases of wound infenction found in freyer's prostatectomy and in study of Joeb Rampurwala 1987 had 30% cases of wound infection.

Epididymitis

In present study 18% cases of epididymitis noted in TURP and 0% cases of epididymitis noted in freyer's prostatectomy. In study of Hamidreza Abdi *et al* [67], there were 8% cases of epididymitis freyer's prostatectomy and 12% cases of epididymitis noted in TURP. 5% cases of epididymitis found in both cases and in study of Joeb Rampurwala 1987[66].

Supra pubic leak

In present study 16% cases of supra pubic leak noted in freyer's prostatectomy. 30% cases of supra pubic leak found in freyer's cases and in study of Joeb Rampurwala 1987[67].

In the study of Amir Nasser Simforoosh *et al* [67] there were 6% cases of supra pubic leak found in freyer's prostatectomy.

3.2.2 Delayed post operative complication**Retention**

In present study none of the patient developed post operative retention in both type of cases.0% cases of retention found in freyer's cases and one patient of retention noted in case of TURP in study of Joeb Rampurwala[65].

Incontinence

In present study 8% cases of incontinence noted in freyer's prostatectomy and 6% cases of

epididymitis noted in TURP. 5% cases of incontinence found in Freyer's cases and 10% cases of incontinence noted in case of TURP in study of Joeb Rampurwala [65]. In the study of Nasser Simforoosh, et al [67] There were 2% cases of incontinence noted TURP and 0% cases noted in open prostatectomy.

Decrease Urinary Stream:

In present study 0% cases of decrease urinary stream noted in Freyer's prostatectomy and 20% cases of decrease urinary stream noted in TURP. P value is <0.05.

Erectile Dysfunction:

In present study 4% cases of erectile dysfunction noted in Freyer's prostatectomy and 0% cases of erectile dysfunction noted in TURP. In the study of Nasser Simforoosh et al [68] There were 6% cases of erectile dysfunction noted TURP and 2% cases of erectile dysfunction noted in open prostatectomy.

Retrograde Ejaculation

In present study 0% cases of retrograde ejaculation noted in Freyer's prostatectomy and 6% cases of retrograde ejaculation noted in TURP. In the study of Nasser Simforoosh et al [67], There were 39% cases of retrograde ejaculation noted TURP and 34% cases of retrograde ejaculation noted in open prostatectomy.

Stricture

In present study 4% cases of stricture noted in Freyer's prostatectomy and 18% cases of stricture noted in TURP. In the study of Mechior series 2.5% cases noted TURP. No cases of stricture noted in study of Joeb Rampurwala [66].

4. Conclusion

Hundred patients, who were candidates for prostate surgery & had been referred to urology outpatient clinic in our hospital between December 2011 to September 2013, were enrolled for the study. Following conclusions were drawn from the present study; Freyer's and TURP are the two commonest surgeries performed for benign prostatic hyperplasia. Freyer's is the open method and TURP is an endourological procedure; both of them having their own complications. Transurethral resection is more gentle method for patients, surgeons and hospitals. However it requires costly instruments, special training and skilled urologist. Hence TURP is better option for small glands. Transvesical prostatectomy should be used by general surgeons in the institutes where resectoscope is not available, with large gland and benign enlargement of prostate associated with bladder pathology. Open transvesical prostatectomy is a safe operation in 60 to 80 g prostates with few complications, because of complete removal of gland

in safe hands. Disadvantages of Freyer's method is long post operative stay, chances of wound infection, need to put external incision. The principle of selecting proper individual patient is important in obtaining good results.

In expert hands and with proper monitoring facilities TURP is the best method of prostatectomy for small glands. However in a country like ours where all ideal facilities are not available Freyer's method will still be widely practiced for long periods.

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