

State of urinary continence after radical prostatectomy: 10-year experience in multiple hospitals in Dhaka, Bangladesh

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ABSTRACT

Background: Radical prostatectomy is a recommended treatment method for patients with localized prostate cancer and a long-life expectancy. Post-radical prostatectomy urinary incontinence (PPI) negatively affects the quality of life. The objective of this study was to assess the state of urinary continence after one year of radical retropubic prostatectomy (RRP).

Methods: This prospective study was conducted between 2010 and 2020, at the Department of Urology, in BIRDEM General Hospital, Dhaka Community Medical College Hospital and Evercare Hospital, Dhaka, Bangladesh. During these 10 years, we completed 60 RRP and followed up every patient for 1 year.

Results: The mean age was 64.5±7 years and the age ranged from 50 to 75 years. The most common clinical stage was T2b and it was 43 (71.7%). Surgical approach was open retropubic in all cases. The mean operative time was 150 minutes and ranged from 120 to 270 minutes. The mean hospital stays of the respondents was 5 days and the mean catheterization period was 2 weeks. Prolong drainage (more than 5 days) was found in 1 (1.7%) case. Thirty-eight (63.33%) patients were continent by 3 months, 15 (25%) patients were continent by 6 months, 4 (6.66%) by 12 months and the rest 3 (5%) were incontinent at the end of 1 year.

Conclusion: In our series, most patients achieved continence after 1 year from RRP and only 5% patients were incontinent after 1 year.

Key words: radical prostatectomy, continence, incontinence.

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INTRODUCTION

To lead a healthy and quality life, urinary continence is considered as an important factor and utmost desirable to everyone. Urinary incontinence is a physical condition when a person cannot prevent urine from leaking out.¹ Over the last few decades, many advances have been taken place in treatment of prostate cancer

but urinary incontinence is still a common complication after radical prostatectomy. Radical prostatectomy is considered as the most common cause of stress urinary incontinence.² A study had estimated that 14–20% of patients who had undergone radical prostatectomy would use absorbent pads on the long term to manage incontinence.³ The most alarming finding was that with the increasing number of radical prostatectomies performed recently, the incidence of incontinence was also likely to rise.⁴ Urinary continence is generally achieved within 1 year of radical prostatectomy but nearly 10% of patients fail to recover within this period and hence they tend to seek further treatment for incontinence.⁵ According to the European Association of Urology (EAU) guidelines, continence after the radical prostatectomy means total control with no leakage or pad usage, no pad use but loss of a few drops of urine or use of up to one “safety” pad per day.⁶ Radical prostatectomy is frequently recommended treatment method for patients with localized disease and a long-life expectancy.⁷ The urologists always try to find least

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invasive treatment that yields maximum patient benefit and minimum treatment related morbidity. Simultaneously, the financial sources supplying health aid worldwide try to support therapeutic modalities to ensure less hospital stays and early recovery. Hence, practice of radical perineal prostatectomy (RPP) has increased again over the last few years.^{8,9} Post-radical prostatectomy urinary incontinence (PPI) negatively affects the quality of life.¹⁰ In a quality of life assessment of patients, who had gone through radical prostatectomy, incontinence was found highly associated with increased confusion, depression and anger and inversely correlated to physical and mental well-being.¹¹ Though there are no standardized guidelines on this issue for the assessment and proceeding with definitive surgical treatment for obstinate incontinence, 1 year after surgery is thought to be the suitable time for this assessment.¹² The present study was carried out to evaluate the state of continence after 1 year, in patients underwent RRP for organ confined prostate cancer.

METHODS

This was a prospective study, conducted at the Department of Urology of BIRDEM General Hospital, Dhaka Community Medical College Hospital and Evercare Hospital Dhaka from 2010 to 2020. Throughout these 10 years we performed 60 RRP for organ confined prostate cancer and followed up for 1 year.

Patients with organ confined prostate cancer, having good performance status and with about 10 years of life expectancy (based on health and mental status, with maximum age limit of 75 years) were included in this study. Patients with metastatic prostate cancer and with poor performance status and multiple comorbidities were excluded.

Two groups of patients were considered for this study. The first group is the patients who visited urology outpatient department (OPD) with lower urinary tract symptoms (LUTS), having positive digital rectal examination (DRE) finding and high levels of serum prostate specific antigen (PSA) (more than 4ng/ml). Then a per rectal prostatic biopsy was done to confirm prostatic malignancy. The second group is patients with post transurethral resection of prostate (TURP), with histopathology report positive for prostate cancer. Both groups of patients were further investigated. Patients with negative isotope bone scan report were advised for pelvic magnetic resonance imaging (MRI). Suitable

patients with organ confined prostatic cancer were advised for radical prostatectomy and counselled accordingly. Patients consented for surgery were optimized and prepared on OPD basis and then admitted for surgery. RRP was done under general anaesthesia. Bilateral pelvic lymph node dissection was done in every patient. Maximum length of membranous urethra was preserved. Prostate removed along with seminal vesicals. In suitable cases, neuro-vascular bundle (NVB) sparing method tried. After reconstructing bladder neck, it was anastomosed with membranous urethra over a foley catheter using 4-0 vicryl interrupted stitches. Pelvic wound was closed in layers, keeping a drain in situ. Pelvic drain was removed when daily collection came below 20 ml. Stitch was removed after 7 days and catheter was removed after 2 weeks. Post-operatively, all the patients were instructed to continue pelvic floor muscle exercise for variable duration and were followed up for at least one year to ensure complication free continence. Diapers or penile clamps were recommended for patients to manage transient period of incontinence. SPSS version 20 was the statistical tool used for this study.

RESULTS

Total patients were 60 with mean age of 64.5±7 (range 50-75) years. The average BMI was 23.9 (range 17.9-29.8) kg/m² and PSA level was 14.5 (1.5-19.8) ng/ml. The most common clinical stage was T2b and it was in 43 (71.7%), T1b in 4 (6.7%) and T3a in 13 (21.7%). The average pathological Gleason score of patients was ≤6 in 2 (3.3%), 7 in 6 (10%) and ≥8 in 52 (86.7%) patients. Surgical approach was open retropubic in all the 60 cases. NVB sparing (unilateral/ bilateral) was possible in 25 (41.7%) patients and lymphadenectomy was done in 60 (100%) patients. The mean operative time was 150 minutes and ranged from (120-270) minutes. Charlson comorbidity score was 0 in 32 patients (53.3%) and followed by 1 in 21 (35%), 2 in 6 (10%) and 3 in 1 (1.7%) patient. The common comorbidity was diabetes in 9 (15%) patients, hypertension in 13 (21.7%) and asthma in 4 (6.7%) patients (Table I).

Immediately after the prostatectomy it was seen that, 9 (15%) used 1 pad a day followed by 17 (28.3%) used 2 pads, 21 (35%) used 3 pads and 13 (21.7%) used 4 pads a day. After the first 3 months, 1 pad was required per day in most of the cases (39, 65%) followed by 2 in 18 (30%), 3 in 2 (3.3%) and 4 in 1 (1.7%) patient. After 6 months, 49 (81.7%) did not require any pads, 9 (15%) patients required 1 pad and 2 (3.3%) required 2 pads. After 1 year, only 3 (5%) patients required 1 pad per day.

Table I. Clinical characteristics of the respondents (N = 60)

| Clinical history of the respondents | | Frequency | Percentage/range |
|-------------------------------------|-------------------------------------|-----------|------------------|
| 1. Clinical stage | T1b | 4 | 6.7 |
| | T2b | 43 | 71.7 |
| | T3a | 13 | 21.7 |
| 2. Pathological Gleason score | ≤6 | 2 | 3.3 |
| | 7 | 6 | 10.0 |
| | ≥8 | 52 | 86.7 |
| 3. Surgical approach | Open retropubic | 60 | 100 |
| | NVB sparing (unilateral/ bilateral) | 25 | 41.7 |
| | Lymphadenectomy | 60 | 100 |
| | Operative time (minutes) | 150 | 120-270 |
| 4. Charlson comorbidity score | 0 | 32 | 53.3 |
| | 1 | 21 | 35.0 |
| | 2 | 6 | 10.0 |
| | 3 | 1 | 1.7 |
| 5. Common comorbidity | Diabetes | 9 | 15 |
| | Hypertension | 13 | 21.7 |
| | Bronchial asthma | 4 | 6.7 |

The mean hospital stays of the patients was 5 days and the mean catheterization period was 2 weeks. Fifty-one (85%) patients had pathological stage T2N0M0 followed by T3aN0M0 in 9 (15%). Mean blood loss was 350 ml and ranged from 300-800 ml and per-operative rectal

injury occurred in only 2 (3.3%) cases. Prolong pelvic drain tube was needed in 2 (3.3%) and surgical site infection was in 3 (5%) cases that required secondary closure. The final continence rate at the end of a year was 95% (Table II, Figure 1).

Table II. Post-operative history and complications (N = 60)

| Post-operative history and complications | | Mean | Percentage/range |
|--|---------------------------|-------|------------------|
| Days of hospital stays | 5 | (4-7) | |
| Catheterization period | 2 weeks | | |
| Pathological Stage | T2N0M0 | 51 | 85.0 |
| | T3aN0M0 | 9 | 15.0 |
| Complications | Mean blood loss (ml) | 350 | 300-800 |
| | Rectal injury | 2 | 3.3 |
| | Prolong pelvic drain tube | 2 | 3.3 |
| | Surgical site infection | 3 | 5 |
| Follow up period | 1 year | | |
| Continence rate at the end of 1 year | | 95% | |

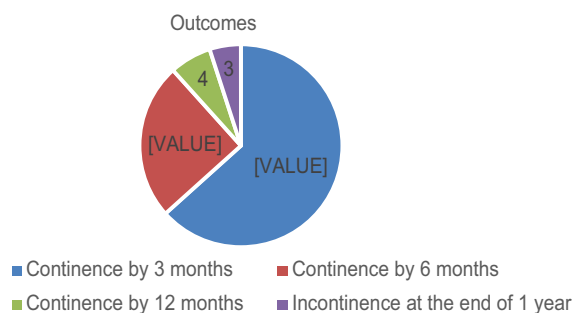


Figure 1. Outcomes after 1 year of follow up

DISCUSSION

Radical prostatectomy can be the most cost-effective procedure, with lower operative costs and shorter times when it is done in experienced hands.¹³ But urinary incontinence is a great hinderance. The study on the outcome of radical prostatectomy as a treatment of prostate cancer conducted by Egawa et.al. showed the mean age 63.5 (range 49–73 years) and PSA level 14.8 ± 21.2 ng/ml,¹⁴ whereas Albayrak et. al. reported mean age 62 (48-75) years and the mean PSA level was 7.4 (1.5- 21) ng/ml.¹⁵ Age can be considered as an important factor as a study found that the recovery of urinary continence was related with younger age but surprisingly not with tumor stage or nerve-sparing surgery.¹⁶ The most common clinical stage was T1 and it was in 66.7% and followed by T2 in 26.7% and T3 in 6.7% in present study. A similar study found the clinical stage was cT1a in 0.8%, cT1c in 83.3% and cT2 in 15.8%.¹⁷ Shin Egawa et. al. showed the clinical stage T1a in 2 patients, T1b in 4, T1c in 26, T2a in 10, T2b in 18, T2c in 10, T3a in 3, T3b in 3, T3c in 15 and T4a in 1 patient.¹⁴ The average pathological Gleason score of patients was ≤ 6 in 3.3%, 7 in 10% and ≥ 8 in 86.7% cases. Pre-operative Gleason score found in the study of Sfoungaristos et.al. was ≤ 6 in 50.4%, 7 in 38.5% and ≥ 8 in 11.1%.¹⁷ The average Gleason score was 6 (4-7)/10 in another study conducted by Albayrak et.al.¹⁵

Surgical approach was open retropubic in all the 60 cases, NVB sparing (unilateral/ bilateral) was done in 41.7% and lymphadenectomy in 100% cases. Seong Jin Jeong et. al. also showed open retropubic in 68.5%, pure laparoscopic in 13.7% and robot assisted surgery in 17.8%, NVB sparing (unilateral/ bilateral) in 42.5% and lymphadenectomy in 72.6% cases.¹⁸ Another related

study by Van Randenborgh et.al. showed lymphadenectomy in 96.2% cases and NVB sparing surgery in 73.4% cases.¹⁹ Our mean operative time was 150 minutes that ranged from 120-270 minutes. The mean operative time in some similar studies are 185.5 (95-470)¹⁸ and 120 (90-270) minutes.¹⁵ Charlson comorbidity score was 0 in most cases, 53.3% and followed by 1 in 35%, 2 in 10% and 3 in 1.7% cases. Similarly, 0 in 53.4%, 1 in 35.6%, 2 in 9.6% and 3 in 1.4% was found.¹⁸ Immediate after the prostatectomy it was seen that, 15% used 1 pad a day and followed by 28.3% used 2 pads, 35% used 3 pads and 21.7% used 4 pads a day. At the first 3 months period, 1 pad was required at baseline (per day) in most of the cases 65% and followed by 2 in 30%, 3 in 3.3% and 4 in 1.7% cases. After 6 months, 81.7% did not require any pads, 15% of patients required one pad and 3.3% 2 pads. After 1 year only 3.3% of patients required one pad per day. Similarly, 1 pad in 65.7% and followed by 2 in 28.8%, 3 in 4.1% and more than 4 in 1.4% was observed.¹⁸ The majority of the authors in their studies assessed the number of pads required in a day and besides, some other authors tried to define urinary continence according to the incidence when patients most frequently lose urine (laughing, coughing, etc.).²¹⁻²³

The mean hospital stay of the patients was 5 days and catheter removed after 2 weeks. Selami Albayrak et. al. showed the mean hospital stay was 1.8 (1-8) days and the same catheterization length.¹⁵ For the highest 85%, pathological stage was T2N0 and followed by T3aN0 in 15%. Similarly, T2N0 in 78.1%, T3aN0 in 15%, T3bN0 in 4.1% and T4N0 in 1.4% was found in a study.¹⁸ Besides, T1C in 74.2%, T2a in 18.4%, T2b in 4.1%, T2c in 3.3% was also observed in another study.¹⁷ Mean blood loss was 350 ml and ranged from 300-800 ml and rectal injury was found in 5% cases, prolong pelvic drain tube in 3.3% and surgical site infection in 5% cases. Similar results were found in another study with mean blood loss 270 (100-1500) ml and rectal injury 2.5% and prolong pelvic drain tube 1.7% patients.¹⁵ All the patients were followed up for the next 1 year after surgery. The study of Seong et. al.¹⁸ found this follow-up was 41.6 months (25-79).¹⁸ However, 1 year follow up had been shown in several studies in this field authenticating the natural history of urinary control after surgery.²⁴⁻²⁷ Patients were followed up for 1 year, 63.33% were continent by 3 months and followed by 25% were continent by 6

months, 8.33% by 12 months and the rest 3.33% were still incontinent at the end of 1 year. This finding is comparable with previous studies in this field.^{25,28,29} Some authors claimed that long-term recovery more specifically more than 1 year after surgery was reliant on patient age in an analysis of all the patients who underwent radical prostatectomy.^{28,30,31} The continence rate was 95% in this series. Selami Albayrak et. al. showed the continence rate 95.3% after 1 year of follow up and most of the patients underwent open retropubic surgical approach and laparoscopic approach was also applied in some cases.¹⁵ Another study showed this rate 56.2% and all the patients under that study gone through the robot assisted surgery for radical prostatectomy, which is almost half comparing to the present study.¹⁸ H van Randenborgh, et. al. showed the continence rate between 2 groups 76.2% and 88.84% and they also claimed the surgical approach was open retropubic.¹⁹ In some other related studies, the authors concluded that surgical experience and technical refinements could result in a decrease in incontinence rates.^{20,21} Comparing with those international studies, the continence rate in our series was quite satisfactory and it can be claimed that it meets up the international standard.

Limitation

Small sample size is a limitation for this study.

Recommendation

Radical retropubic prostatectomy for organ confined prostatic malignancy is not a common procedure in our country. Most of the cases of organ confined prostate cancer are managed conservatively using either androgen deprivation therapy or radiation or both. But RRP is a better alternative for suitable groups of patients considering the low incidence of post operative incontinence. We hope and believe that in coming days more urologists will get involved and take initiative to popularize RRP and share their experience to enrich the level of care in this arena.

Conclusion

Urinary incontinence after radical prostatectomy in early post-operative period is not unexpected, rather it is common in most patients. But in the course of time, most of the patient achieves urinary continence. In our series, 55 (95%) patients achieved continence after 1

year from RRP, which is good and is on par with other similar studies. Only 3 (5%) patients were incontinent after 1 year. If done by a competent team, RRP is a safe procedure with high success rate in terms of cure and continence. If practicing urologists take initiative and step forward, it can be popularized to serve deserving patients.

Authors' contribution: MTA contributed to literature search. Both MTA and ATMMC conceptualized the study design. MTA collected and analyzed data and drafted manuscript. ATMMC participated in critical review of manuscripts and overall supervision.

Conflict of interest: Nothing to declare.

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