Original Article

Initial Experience of Open Radical Retropubic Prostatecomy With 5 Cases

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Abstract

Background: *Radical prostatectomy is the best treatment option for clinically localized prostate cancer. But oncological as well as functional outcomes of this procedure including incontinence and erectile dysfunction are a big challenge for the surgeon.* ***Objectives:*** *This paper has focused on our initial experiences of oncological and functional outcomes of open radical retropubic prostatectomy.* ***Materials and methods:*** *Total five cases underwent open radical retropubic prostatectomy between January'2016 to October' 2017. All patients had clinically organ confined prostatic adenocarcinoma. Open radical retropubic prostatectomy with bilateral pelvic lymph node dissection was done through a lower midline incision. We observed the surgical experiences and assess the oncological and functional outcomes postoperatively.* ***Results:*** *The median age (range) of patients at diagnosis was 63 (56-72) years. The median Gleason sum (range) was 7 (6-9) and mean pretreatment PSA was 16.2±5.4 ng/ml. There was no perioperative mortality and no major complications in immediate postoperative period. Final pathological specimen shows negative surgical margin in all cases but one patient has positive unilateral lymph nodes. One patient achieved continence within 3 months; three patients achieved continence at 6 months, one patient after one year. Two patients had satisfactory erection at 6 months; onepatients are at 9 months, and two patients could not gain erection after one year.* ***Conclusion:*** *Though open radical retropubic prostatectomy is tough procedure due to its difficult access to the surgical field. Oncological and functional outcome is totally depending on the skill of the surgical team.*

Keywords: *Open radical retropubic prostatectomy.*

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Introduction

The incidence of prostate cancer is increasing day by day. There are many treatment options for prostate cancer patients and each has a distinct impact on patient's health related quality of life. For many patients of clinically localized prostate cancer with a long life expectancy and good performance status, radical prostatectomy remains the most effective approach with respect to both oncological success and maximization of quality of life.

Retro pubic Radical Prostatectomy (RRP) was first reported by Millin in 1947.[1] However, the procedure was associated with significant blood loss, incontinence and impotence. In the early 1980s, Walsh[2] laid the foundations of anatomic RRP with better understanding of the prostate anatomy, specifically the dorsal vein complex and neurovascular bundle (NVB). These results were associated with better functional outcomes without compromising oncologic principles. Robotic assisted laparoscopic radical prostatectomy has become popular because of ease of pelvic access, high power magnification and minimal bleeding but yet to be determined regarding the best outcome.

Here we present the outcome of open radical retro pubic prostatectomy of only 5 cases with a special emphasis on initial experiences, operative observation, functional and oncologic outcomes.

Materials and methods

This prospective study was done in department of urology, Dhaka Medical College Hospital; Center for Kidney Diseases and Urology Hospital, Shyamoli, Dhaka and KYAMCH, Sirajgonj between January'2016 and October'2017. Total 5 cases were included for this procedure. Patients of 56-72

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years of age with clinically localized prostate cancer and good performance status were included in this study. None of the patients had prior pelvic radiation or surgery but one was impotent.

Operative technique

All Patients were placed in dorsal decubitus position with tilting the operating table at umbilicus level. Above the umbilicus, the patient's body was in the Trendelenburg position forming an angle of about 30° with the lower part of the body which remains horizontal. Special instruments were Belfour retractor and clip applicator. Through a lower midline incision space of Retzius was approached. Then bilateral pelvic lymph node dissection including obturator, hypo gastric and external iliac groups limited over the external iliac veins were done and preserved for histopathological examination. After incising the end opelvic fascia accessory pudendal artery was preserved and puboprostatic ligaments were partially resected. After dividing the dorsal venous complex at the midlevel of the prostate, surrounding tissue of the sphincter was preserved and prostatic apex was dissected obliquely. Urethra was transected close to the apex. Then prostate was dissected with Denonvillier's fascia in retrograde fashion. For preservation of neurovascular bundles dorsolateral dissection was done close to the prostate and hemostasis was ensured with clip applicator. Bladder neck was then divided at vesicoprostatic junction and both seminal vesicles were dissected from surroundings. Specimen was retrieved after dividing the vas. After approximation of bladder neck, mucosal eversion was done and vesicourethral anastomosis was done at 12, 2, 4, 6, 8 and 10 O'clock position with a horizontal mattress at 6 O'clock position over a 3 way Foley catheter. Wound was closed in layers keeping a drain in situ. Urethral catheter was removed on 14th post-operative day except one patient of early post-operative urine leakage whom catheter was removed after 3 weeks. Between 5th to 6th postoperative day patientwas discharged from the hospital, except one patient of early urine leakage who was discharged on 9th post-operative day.

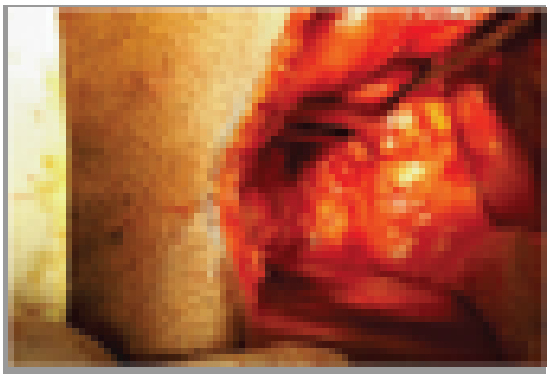

Figure 1: Visible obturator nerve and external iliac vein after lymph node dissection.

Figure 2: Radical prostatectomy specimen.

Table I: Patients characteristics (n=5)

Median age (range) in years	63 (56-72)
Median Gleason score	7 (6-9)
Mean pretreatment S. PSA (ng/ml)	16.2±5.4
Bilateral nerve sparing	4
No nerve sparing	1
Complications	
Wound infection	0
Anastomotic urinary leakage	1
Retention	0
Pelvic hematoma	0

Outcome assessment

Outcomes were assessed on immediate post-operative period, after catheter removal, at 6 weeks and then 3 monthly up to 1 year with respect of biochemical parameters, continence and erection.

Results

The median age (range) of patients at diagnosis was 63 (56-72) years. The median Gleason sum (range) was 7 (6-9) and mean pretreatment PSA was 16.2±5.4 ng/ml. Mean operative time was two and half an hour. Blood loss was minimum but every patient received a one unit of transfusion. There was no perioperative mortality and no major complications in immediate postoperative period. Final pathological specimen shows negative surgical margin in all cases but one patient has positive unilateral lymph nodes. At 6 weeks mean PSA of four patients is below 1 ng/ml with no progression in the follow up period. One patient achieved continence within 3 months, three patients achieved continence at 6 months, one patient after one year. Two patients had satisfactory erection at 6 months; one patient had at 9 months, and two patients could not gain erection after one year. Out of those patients with no erection, one not underwent nerve sparing procedure as he was impotent preoperatively.

Table II: Outcome evaluation

Case no	Follow up	S. PSA ng/ml	Continence	Erection	Negative margin	Lymph node involvement	Clinical stage	Final stage
1	6 wks	0.1	No	No	Yes	No	T2bN0M0	T2cN0M0
	3 m	0.05	No	No				
	6 m	0.05	No	Yes				
	9 m	0.05	No					
	12 m	0.05	Yes					
2	6 wks	0.9	No	No	Yes	No	T2cN0M0	T2cN0M0
	3 m	0.5	No	No				
	6 m	0.05	Yes	No				
	9 m	0.05		Yes				
	12 m	0.1						
3	6 wks	0.9	No	No	Yes	No	T2cN0M0	T2cN0M0
	3 m	0.4	Yes	No				
	6 m	0.05		No				
	9 m	0.05		No				
	12 m	0.1		No				
4	6 wks	0.04	No	No	Yes	No	T2cN0M0	T2cN0M0
	3 m	0.05	No	No				
	6 m	0.1	Yes	No				
	9 m	0.05		No				
	12 m	0.05		No				
5	6 wks	0.9	No	No	Yes	Yes	T2cN0M0	T3bN1M0
	3 m	0.05	No	No				
	6 m	0.9	Yes	Yes				
	9 m	0.9						
	12 m	1.0						

Discussion

Operative outcomes

Mortality associated with radical prostatectomy is very low. There is acceptable blood loss and length of hospital stay. In our experiences, as access is difficult to open radical retropubic prostatectomy, very good and skilled assistant, operating light, appropriate retractor and finally maintenance of blood less operating field is very much important for meticulous dissection and smooth surgery.

One of the critical steps of radical prostatectomy that may influence the rate of postoperative complications is the anastomosis of the bladder to the urethral stump. The general principle to achieve this, beside the anastomotic technique used, is a watertight, tension-free anastomosis with mucosal-to-mucosal coaptation and proper urethral alignment. Historically, the number of six sutures was described by Walsh to be used for the vesicourethral anastomosis.[2] Four, two, even a running suture technique were used in clinical practice.[3] We considered the mucosal eversion in vesicourethral anastomosis and six interrupted sutures with horizontal mattress at 6 O'clock position. Post-operative urinary leakage through drain may last for few days and it causes no problem further. The rate of anastomotic bladder neck stricture after radical perineal prostatectomy and radical retropubic prostatectomy was 3.8% (33/863) and 5.5% (113/2048), respectively[4]. In our experiences we still not face any bladder neck contracture.

Oncological outcome

The primary goal of prostate cancer surgery is to provide satisfactory oncologic outcomes. The ideal measures in determining long-term oncologic control, biochemical progression and margin positivity are the two commonly used indices to assess oncologic outcomes. While radical retropubic prostatectomy provides long-term oncologic control for up to 15 years, limited follow-up is available for the minimally invasive approaches. In patients who underwent radical retropubic prostatectomy between 1998 and 2003 at the Mayo Clinic, the 3-year and 5-year PSA progression-free survival estimate rates were 99% and 98%, respectively[5]. In this study, four patients out of five achieved PSA level below 1 ng/ml, there was no progression up to one year, remaining one patient had PSA level 1 ng/ml after 1 year whom final stage was T3N1M0.

Positive margin rate is another method of assessment of oncologic outcomes. There are several reports that have consistently reported that an surgical margin positive represents an independent predictor of biochemical recurrence after radical prostatectomy[6,7]. In our experiences, all of the five patients have negative surgical margin but one patient has positive unilateral lymph node. Dissection should be outside the capsule and if any suspicion during operation nerve sparing procedure should be avoided.

Functional outcome

Continence

Many differences exist between definitions of continence and the way that the information is obtained. The best way to analyze this outcome is undoubtedly the use of validated questionnaires. Stolzenburg et al. reported a continence rate of 84% at 6-month follow-up and a 92% continence rate at 1-year follow-up in 700 extraperitoneal laparoscopic radical prostatectomy[8]. In this study, one patient achieved continence within 3 months, three patients achieved continence at 6 months, one patient after one year.

It should be noted that patient selection, tumor characteristics, and surgeon experience may interfere with the outcomes. Meticulous dissection, not using the diathermy near apex of prostate and preservation of surroundings tissue as much as possible near sphincter should be done for optimum results.

Potency

Erectile function outcomes after radical prostatectomy depend on the urologist's subjective impression, patient's self-statement, use of validated questionnaires and various types of definitions for potency. Unquestionably, the performance of a nerve sparing procedure is of critical importance as well as the postoperative use of topic or oral medications. Menon et al., in a study of more than 1100 patients, reported an intercourse rate of 64% for men younger than 60 years and 38% for men older than 60 years at 6-month follow-up.[9]

In this study two patient was potent at 6 one patient had after 9 months, two were failed to regain erection after 1 year, one of them not underwent nerve sparing procedure as preoperatively impotent. Meticulous dissection, not using the diathermy during posterolateral dissection of prostate and appropriate patient selection is important for optimum results.

Conclusions

Radical prostatectomy has been considered the gold standard treatment option for localized prostate cancer. Operative skill and experience of a surgeon is the main concern to get maximum oncological outcome and to reduce post-operative morbidity.

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