ผลลัพธ์ของการผ่าตัดต่อมลูกหมากโดยการส่องกล้องในผู้ป่วยมะเร็งต่อมลูกหมาก ระยะเวลา 5 ปี ที่โรงพยาบาลสรรพสิทธิประสงค์

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รับบทความ: 27 มกราคม 2568 ปรับแก้บทความ: 11 มิถุนายน 2568 ตอบรับตีพิมพ์: 2 กรกฎาคม 2568

บทคัดย่อ

วัตถุประสงค์: เพื่อทบทวนผลการผ่าตัดและข้อมูลหลังการผ่าตัดจากแพทย์ระบบทางเดินปัสสาวะที่มีประสบการณ์ในโรงพยาบาลสรรพสิทธิประสงค์

ผู้ป่วยและวิธีการศึกษา: งานวิจัยนี้เป็นการศึกษาย้อนหลังระหว่างผู้ป่วยที่ได้รับการวินิจฉัยว่าเป็นมะเร็งต่อมลูกหมากและได้เข้ารับการผ่าตัดต่อมลูกหมากด้วยกล้อง (LRP) ที่โรงพยาบาลสรรพสิทธิประสงค์ ตั้งแต่ปี พ.ศ. 2559 ถึง พ.ศ.2564

ผลการศึกษา: ผู้ป่วยจำนวน 17 คน อายุเฉลี่ยคือ 67.9 ปี (62.6-73.2) ค่ามัธยฐานของระดับ PSA เริ่มต้นคือ 15.3 (10.8-27.9) ระยะเวลาเฉลี่ยของการนอนโรงพยาบาล (LOS) คือ 13 วัน (11-18) มากกว่าครึ่งหนึ่งของผู้ป่วยเป็นผู้ป่วยระยะ T1-T2 (70.7%) เวลาผ่าตัดเฉลี่ยคือ 450 นาที (360-530) ค่ามัธยฐานของการสูญเสียเลือด (EBL) คือ 800 มล. (550-1,500) ภาวะแทรกซ้อนระหว่างการผ่าตัดเกิดขึ้น 3 อย่าง: การบาดเจ็บของหลอดเลือด 1 ครั้ง (5.9%) การบาดเจ็บทางทวารหนัก 1 ครั้ง (5.9%) และการบาดเจ็บที่ท่อปัสสาวะ 1 ครั้ง (5.9%) มีผู้ป่วยเพียง 2 ราย (11.8%) ที่ถูกเปลี่ยนเป็นการผ่าตัดแบบเปิด 1 รายเกิดจากการบาดเจ็บของหลอดเลือดใหญ่ และอีกรายเกิดจากคลื่นไฟฟ้าหัวใจผิดปกติระหว่างผ่าตัด มีผู้ป่วยเพียงคนเดียวที่เสียชีวิตในงานวิจัยนี้ (5.9%) เวลาสายสวนเฉลี่ยคือ 16 วัน (9-24) ภาวะแทรกซ้อนหลังผ่าตัดมีการรั่วไหลของปัสสาวะ 7 (43.8%) 3 การติดเชื้อทางเดินปัสสาวะ (UTI) (17.6%) และภาวะความดันโลหิตต่ำจากการเสียเลือด (6.3%) ผู้ป่วย 10 คนมีอาการกลั้นปัสสาวะไม่อยู่ (62.5%) หลังจากติดตาม 1 ปี โดยอัตราPositive margin โดยรวมคือ 50% (20% สำหรับ pT2 และ 100% สำหรับ pT3)

สรุป: การผ่าตัดมะเร็งต่อมลูกหมากผ่านกล้อง เป็นการผ่าตัดที่มีประโยชน์กับผู้ป่วย โดยอัตราการเสียชีวิตค่อนข้างต่ำ อีกทั้งภาวะแทรกซ้อนไม่รุนแรง และสามารถจัดการได้อย่างระมัดระวัง ทั้งนี้เรื่อง Positive margin และการกลั้นปัสสาวะไม่อยู่ ยังพบในอัตราสูงกว่ารายงานวิจัยก่อนหน้านี้ ทั้งนี้ทักษะและเทคนิคการผ่าตัดของเรายังคงต้องได้รับประสบการณ์และการปรับปรุงเพิ่มเติม เพื่อช่วยลดภาวะแทรกซ้อนข้างต้น เพิ่มคุณภาพชีวิตหลังผ่าตัดและการอยู่รอดโดยรวมของผู้ป่วยให้ดีขึ้น

คำสำคัญ: มะเร็งต่อมลูกหมาก, การผ่าตัดผ่านกล้อง, การผ่าตัดมะเร็งต่อมลูกหมากผ่านกล้อง, ภาวะแทรกซ้อน

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Introduction

Prostate cancer is the 5th most common cancer affecting in Thai males[1]. Its incidence rates were increasing in every year causing mortality rates was approximately 2.0 per 100,000 men[2]. In the past, the treatment of prostate cancer was mostly open surgery which had high morbidity and mortality, until laparoscopic prostatectomy has been initially described by Schuessler, et al. in 1997[3] and has been developed and standardized by Guillonneau and Vallancien in 2000[4]. Nowadays, LRP has gained more popularity in many centers as an alternative for patients. Several studies have indicated that laparoscopic prostatectomy has several advantages over open surgery, including shorter operative time, less blood loss, less risk of injury to nearby organs, shorter hospital stay, and reduced postoperative catheterization time, as well as significantly improved oncological outcomes[5–7].

Sunpasitthiprasong Hospital is a tertiary care hospital with the potential to care for prostate cancer patients. Laparoscopic radical prostatectomy has been initially performed since 2012 in our Hospital. However, there has been no study on the treatment outcomes yet. Therefore, we want to study the treatment outcomes and complications after laparoscopic surgery of prostate cancer patients in order to improve surgical techniques, review and prevent complications, and as reference data for future studies.

Materials and methods

The data was retrospectively reviewed from medical record among patients diagnosed with prostate cancer and underwent LRP in Sunpasitthiprasong Hospital from 2016 to 2021. The diagnosis was confirmed by transrectal ultrasound-guided biopsy (TRUS Bx) or an imaging result suggestion of prostate cancer. All patients' characteristics, postoperative outcomes and pathological reports were retrospectively collected and analyzed. We collected the demographic and operative parameters included age, length of stay (LOS), initial PSA level (ng/mL), prostate volume (mL), clinical and pathological staging, Gleason grade group from the biopsy, risk classification, operative time, estimate blood loss (EBL), transfusion rate, conversion rate, catheterization time, intraoperative and postoperative complications. The definition of clinical and pathological staging, Gleason grade group and risk classification were referenced by National Comprehensive Cancer Network (NCCN), Prostate cancer (version 4.2022)[8].

The outcome of this study defined as the complications that occurred in intraoperative, postoperative period, the functional and oncologic outcome. The intraoperative complications as rectal injury, ureter injury, bladder injury, vascular injury, etc. Postoperative complications such as wound infection, anastomosis urine leakage, hemorrhagic complications, lymphocele, thromboembolic event, port stie hernia, fistula, etc. The functional outcome that impacted quality of

life after surgery such as incontinence rate, erectile dysfunction rate. Pathologic reports included pathologic staging, Gleason's grade group, margin status, extraprostatic extension (EPE), lymphovascular invasion (LVI), perineural invasion, seminal vesicle invasion and lymph node metastasis. Our oncologic outcome, we interested in, was overall and staging that had margin positive.

As for the surgical technique, all patients received extraperitoneal approach.

The patient was placed in low lithrotomy with Trendelenburg position after general anesthesia and Foley catheter insertion. Five trocars were placed by open technique as inverted V-configuration: two trocars on each side of lower abdomen with one camera port in the middle of periumbilical area. Pneumoperitoneum was created by CO2 gas. Bilateral pelvic lymph-adenectomy was first done as indicated. Then, we entered the space of Retzius, followed by bladder neck resection, mobilized seminal vesical and dissected lateral pedicles. The neurovascular bundle was spared if possible. The endopelvic fascia was incised on both sides to expose the prostatic apex, The puboprostatic ligaments were sectioned and dorsal vein complex (DVC) was sutured ligated and cut. The balloon of the foley catheter was then deflated, the tip of the catheter was lifted, and the circumferential division of urethra was accomplished. The catheter was then removed. When the prostate was dissected freely from surrounding tissue, urethro-vesicle anastomosis was performed by continuous running suture with 3-0 V-lock suture followed by a new Foley 20-Fr insertion. Tube drain was placed in surgical bed as the last step. Normally, Foley catheter was placed 7-14 days. Cystogram prior to removing catheter was not routinely performed unless suspicious of anastomosis leakage or complicated cases.

Results

The patients' demographic data was present as in table 1. The mean age of patients was 67.9 years old (62.6-73.2). The median of initial PSA level was 15.3 ng/mL (10.8-27.9). The mean prostate volume was 51.3 mL (38.0-64.6). The median length of stay (LOS) was 13 days (11-18). There were 16 patients that performed TRUS Bx, while only one patient was diagnosed by an imaging, suggestion of prostate cancer. The pathology result from TRUS Bx showed that more than half of them were clinical stage T1-T2 (70.7%) and grade group 1-2 (78%). The risk classification was slightly equal in each group: 6 favorable intermediate risk (35.3%), 6 high risk (35.3%) and 4 very high risk (23.5%).

Table 1 Demographic data of the patients

Parameters	n	Total
Age (years)	17	67.9 ± 5.3
LOS (days)	17	13 (11-18)
Initial PSA (ng/mL)	17	15.3 (10.8-27.9)
Prostate vol (mL)	17	51.3 ± 13.3
Clinical stage (%)		
T1c		7 (41.2%)
T2a		2 (11.8%)
T2b	16*	2 (11.8%)
T2c		1 (5.9%)
T3a		1 (5.9%)
T3b		3 (17.6%)
Grade group		
0		1 (5.9%)
1		3 (17.6%)
2	16*	8 (47.1%)
3		1 (5.9%)
4		0 (0.0%)
5		3 (17.6%)
Risk classification		
High		6 (35.3%)
Intermediate - Favorable	16*	6 (35.3%)
Very high risk		4 (23.5%)

*One patient did not perform a TRUS biopsy

As intraoperative results, shown in table 2, of 17 patients diagnosed with prostate cancer and underwent LRP, 16 had prostate removed successfully with the conversion rate of 11.8% (2 of 17). One was converted to open surgery due to an intraoperative abnormal EKG and anesthetist's uneasiness but could successfully remove the prostate. Another one failed to proceed with the prostatectomy due to accidentally injuring a common iliac vessel at the initial step and needed a consultation with vascular surgeon to open repair at once. The median operative time was 450 min (360-530). The median EBL was 800 mL (550-1,500). The blood transfusion rate was 41.2% (7 of 17).

Table 2 Intraoperative and postoperative data of the patients

Parameters	n	Total
Operative time (min)	17	450 (360-530)
EBL (mL)	17	800 (550-1,500)
Transfusion rate	17	7 (41.2%)
Conversion rate	17	2 (11.8%)
Catheter time (days)	16*	16 (9-24)
Complications		
● Intraoperative period		
Rectal injury	17	1 (5.9%)
Vessel injury		1 (5.9%)
Ureteric orifice injury		1 (5.9%)
● Postoperative period		
Anastomosis leakage	16*	7 (43.8%)
UTI		3 (18.8%)
Hemorrhagic shock		1 (6.3%)
Urinary retention		1 (6.3%)
Thromboembolism		0
Hernia		0
Fistula		0
● Functional outcome		
Incontinence	16*	10 (62.5%)
Erectile dysfunction		N/A

*One patient aborted the operation due to intraoperative complication.

Three intraoperative complications occurred in this study. One (5.9%) had a common iliac injury as mentioned. Unfortunately, after repaired by a vascular surgeon, the patient was developed severe sepsis and kidney failure in postoperative care and passed away. Ureteric orifice injury occurred in 1 patient (5.9%) that was subsequently diverted with percutenous nephrostomy (PCN) then anterograde DJ stent insertion. One had rectal injury (5.9%) that occurred during the posterior dissection.

The injury was less than 2 cm and was successfully repaired without diverting colostomy. No fistula or other complicated symptoms after 1-year follow-up in this patient.

In the postoperative period, the median catheterization time was 16 days (9-24). As early complications, we found 7 patients had anastomosis leakage (43.8%), 3 of UTI (17.6%) and 1 was hemorrhagic shock (6.3%). No one developed thromboembolic event after surgery. In 1-year follow-up, there were 10 patients who had urinary incontinence (62.5%). Erectile dysfunction data was limited due to lack of medical record.

The oncological results were shown in table 3. Most of them were pT2 stage (58.8%), pT3b (23.5%) and pT3a (11.8%) respectively. There were 8 overall positive margin (50%), which 100% positive in pT3a and pT3b patients. While patients with pT2 had only 20% positive margin. No one had regional lymph node metastasis.

Table 3 Pathology results of prostatic cancer patients

Pathologic results	**Total (n=16)**
Staging	
pT2	10 (62.5%)
pT3a	2 (12.5%)
pT3b	4 (25.0%)
Grade group	
1	4 (25.0%)
2	6 (37.5%)
3	2 (12.5%)
4	3 (18.8%)
5	1 (6.3%)
Node positive	0 (0.0%)
Overall positive margin	8 (50.0%)
No. positive margin by stage	
pT2	2 (20.0%)
pT3a	2 (100.0%)
pT3b	4 (100.0%)

Discussion

Laparoscopic radical prostatectomy was first described by Schuessler et al. in 1997[3] and has been confirmed in good benefit and mostly lower morbidity than open prostatectomy by Guillonneau and Vallancien in 2000[4] and many sequelae reports[5-7,9]. In aspect of oncologic outcome, some studies reported that LRP offers satisfactory results in oncological aspect compared to open technique as in Guillonneau, et al study in 2003[10]. However, some studies shown that LRP had similar complications and oncologic outcome to open surgery, longer operative time but mostly reported the length of stay and duration of catheterization were shorter[11-12].

LRP was commenced in Sunpasitthiprasong Hospital in 2012 and has been performed continuously since then. Our four urologists have gained experience in LRP over the years, but there have been no reports of any outcomes yet. Our objective was to evaluate the outcome of the postoperative results and ascertain whether LRP was a safe and feasible option for prostate cancer patients in the largest hospital in the Northeast, Thailand.

In our study, as in table 4, the operative time was longer than most series (about 260-270 min), but slightly close to the reports from Thailand (350-425 min)[13-15]. The EBL was comparable to most studies with a range of 400-1400 ml. The transfusion rate in our study more than other studies was 41.2% compared with 2.0-31.0%. Intraoperative rectal and ureteral injury were hardly found in many studies. There were only 1.0-3.6% of incidents reported, which was less than in our studies. The interesting intraoperative complication was an iliac injury that was happening in one of our patients and caused mortality. It was a very rare incident as hardly found in most series. Turk, et al[9] was reported one of that (0.8%). After reviewing the operation, we summarized that it was surgical technique error when inserting the trocar in an awkward position during the operation. This must be an awareness step and the surgeon's position must be in the correct, safety and comfortable position before doing any high-risk procedure.

Table 4 Comparison of outcomes and complications in prior reports

Parameters	Turk[9] (n =125)	Rassweiler[18] (n = 180)	Guillonneau[9] (n = 567)	Nualyong[13] (n = 56)	Sirithanaphol[15] (n = 20)	Thaidumrong[14] (n = 100)	Present (n = 17)
Operative time (min)	265	271	265	350	180	425	450
EBL (mL)	185	1230	400	883	400	1400	800
Catheter time (days)	12	7	-	7	-	7	16
Transfusion rate	1.6%	31.0%	15.4%	27.6%	10.0%	-	41.2%
Conversion rate	0.0%	4.9%	9.2%	16.0%	5.0%	-	11.8%
Complications							
● Intraoperative							
Rectal injury	2.4%	1.6%	1.4%	-	-	10.0%	5.9%
Iliac injury	0.8%	-	-	-	-	-	5.9%
Ureteral injury	-	-	0.7%	3.6%	-	-	5.9%

● Postoperative							
Anastomotic leakage	13.6%	19.4%	10.0%	8.9%	5.0%	11.0%	43.8%
Hemorrhagic events	1.6%	10.0%	1.7%	1.8%	5.0%	3.0%	6.3%
AUR	-	-	4.5%	-	-	-	6.3%
UTI	-	-	-	1.8%	-	-	18.8%
Fistulas	0.8%	1.1%	-	-	-	-	-
Anastomotic stricture	1.6%	3.3%	-	-	-	-	-
Thromboembolism	2.4%	-	0.3%	-	-	1.0%	-
Trocar hernia	-	0.5%	-	-	-	-	-
Oncologic outcome							
Positive margin	26.4%	16.0%	12.3%	29.8%	30.0%	21.6%	50.0%

Most postoperative complications in our study were minor and can be managed conservatively. Anastomosis leakage was present in about 43.8% of our patients, which was more than other studies (5.0-19.4%). It was resolved with prolonged catheter with a median time of 16 days. Postoperative UTI, urinary retention and hemorrhagic shock were also found in our practice, but no one was dead and improved with adequate resuscitation and antibiotics. Other serious complications such as fistula and thromboembolic event report incident about 0.8-2.4% in other series[9,14,16], but not found in our study.

From the oncological aspect, the overall positive margin rate in our study is 50%, which is higher compared to many series (12.3-29.8%)[17]. Our positive margin rates are 100% high in those with pT3a and pT3b staging compared to about 31% of other reports[10,18,19]. This result certainly needs to be improved in our practice.

The incontinence rate is concerned in our practice because of the quality of life. In our study, the rate of incontinence which was taken from the patients' history when they came for follow-up is only 62.5%. However, it is difficult to compare our results to other studies due to the inaccurate assessment of degree of incontinence as well as the difference in the definite of incontinence in each study. Some studies use a definition of continence by using numbers of pads used[17]. They reported that most patients' symptom is improved within 6-12 months of follow-up in most studies[16-17,19]. Erectile dysfunction data was limited in our study due to lack of medical records, as in many studies, which included this data only on as small subset of patients.

Anastomosis leakage and incontinence are the concern problem. In our opinion, surgical technique is the important role, meticulous technique to preserving the surrounding structures, including the bladder

neck and sphincter muscle. Interestingly, studies have shown that an alternative technique called the vesicourethral alignment technique[20] is both feasible and associated with acceptable rates of continence, urinary extravasation, and stricture. Type of suture may helping anastomosis secure such as V-loc[21] that offer faster, easier suturing and potential better healing outcomes

This study has some limitations. It is a retrospective and descriptive study. Moreover, some medical records were missing such as ED rate and the 1-year follow-up period is still too early to state the long-term results especially oncologic and functional outcome.

Conclusion

Although LRP in our practice gives many benefits, rarely mortality, complications mostly minor and could be managed conservatively, positive surgical margin and continence rate were slightly higher compared to other series. Our practice skills and surgical technique still needs to gain more experienced and further improvement. To help in decreasing rates of the negative oncological and improve postoperative quality of life and overall survival of the patients.

Conflict of interest: The authors have declared that no competing interests exist.

Reference

1. National cancer institute (NCI). Hospital-based cancer registry 2021. Bangkok: National cancer institute (NCI); 2022.
2. Sriplung H, Wiangnon S, Sontipong S, et al. Cancer Incidence Trends in Thailand, Asian Pac J Cancer Prev 2006;7(2):239-44.
3. Schuessler WW, Schulam PG, Clayman RV, et al. Laparoscopic radical prostatectomy: initial short-term experience. Urology 1997;50 (6):854–7.
4. Guillonneau B, Vallancien G. Laparo scopic radical prostatectomy: the Montsouris technique. J Urol 2000;163 (6):1643–9.
5. Akand M, Celik O, Avci E, et al. Open, laparoscopic and robot-assisted laparoscopic radical prostatectomy: comparative analysis of operative and pathologic outcomes for three techniques with a single surgeon's experience. Eur Rev Med Pharmacol Sci 2015;19(4):525–31.
6. Ilic D, Evans SM, Allan CA, et al. Laparoscopic and robotic-assisted versus open radical prostatectomy for the treatment of localized prostate cancer. Cochrane Database Syst Rev 2017;9(9):CD009625.
7. Seo HJ, Lee NR, Son SK, et al. Comparison of robot-assisted radical prostatectomy and open radical prostatectomy outcomes: a systematic review and meta-analysis. Yonsei Med J 2016;57(5):1165–77.
8. National Comprehensive Cancer Network. Prostate Cancer (Version 4.2022). 2022.
9. Türk I, Değer S, Winkelmann B, et al. Laparoscopic radical prostatectomy. Technical aspects and experience with 125 cases. Eur Urol 2001;40:46–53.
10. Guillonneau B, el-Fettouh H, Baumert H, et al. Laparoscopic radical prostatectomy: oncological evaluation after 1,000 cases a Montsouris Institute. J Urol 2003;169(4):1261–6.
11. Tooher R, Swindle P, Woo H, et al. Laparoscopic Radical Prostatectomy for Localized Prostate Cancer: A Systematic Review of Comparative Studies. J Urol 2006;175(6):2011.
12. Rassweiler J, Seeman O, Schulze M, et al. Laparoscopic Versus Open Radical Prostatectomy: A Comparative Study at a Single Institution. J Urol 2003;169:1689-93.
13. Nualyong C, Srinualnad S, Taweemonkongsap T, et al. Laparoscopic radical prostatec tomy: preliminary result of Thailand series. J Med Assoc Thai 2006;89(9):1440–6.
14. Thaidumrong T, Akarasakul D, Doungkae S. Laparoscopic radical prostatectomy technical aspects and experience with 100 cases in Rajavithi Hospital. J Med Assoc Thai 2011;94 (Suppl 2):S29-34.
15. Sirithanaphol W, Rompsaithong U, Kiatsopit P, et al. Laparoscopic Radical Prostatec tomy: Initial Experience in Srinagarind Hospital. SMJ 2019;34(5):417–21.

16. Guillonneau B, Cathelineau X, Doublet JD, et al. Laparoscopic radical prosta tectomy: assessment after 550 procedures. Crit Rev Oncol Hematol 2002;43(2):123–33.
17. Bove P, Asimakopoulos AD, Kim FJ, et al. Laparoscopic radical prostatectomy: a review. Int Braz J Urol 2009; 35(2):125–37; discussion 137-39.
18. Rassweiler J, Sentker L, Seemann O, et al. Laparoscopic radical prostatectomy with the Heilbronn technique: an analy sis of the first 180 cases. J Urol 2001; 166(6):2101–8.
19. Stolzenburg JU, Rabenalt R, Do M, et al. Endoscopic extraperitoneal radical prostatectomy: oncological and functional results after 700 procedures. J Urol 2005;174(4 Pt 1):1271–5;discussion 1275.
20. Siriboonrid S, Binsri N, Lertpiwan W, et al. Vesicourethral Alignment Technique in Laparoscopic Radical Prostatectomy at Phramongkutklao Hospital: 5 years' Experience in Continence Outcomes. The Thai Journal of Urology 2016;37:23-32.
21. Tomasz W, Lukasz B, Katarzyna G, et al. Van Velthoven single-knot running suture versus Chlosta's running suture versus single barbed suture V-Loc for vesicourethral anastomosis in laparoscopic radical prostatectomy: a retrospective comparative study. Wideochir Inne Tech Maloinwazyjne 2022;17(1):214-25.

Results of Laparoscopic radical prostatectomy in prostatic cancer patients at the Sunpasitthiprasong Hospital: A 5-year review

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Received: January 27, 2025 Revised: June 11, 2025 Accepted: July 2, 2025

Abstract

Objective: To review the results of surgery and postoperative data from experienced urologist in Sunpasitthiprasong Hospital.

Material and methods: This retrospective descriptive study was studied among patients diagnosed with prostate cancer and underwent laparoscopic radical prostatectomy (LRP) in Sunpasitthiprasong Hospital from 2016 to 2021. All patients' demographic data, postoperative parameters and pathological results were recorded and analyzed.

Results: Of 17 patients, the mean age of patients was 67.9 years old (62.6-73.2). The median of initial PSA level was 15.3 (10.8-27.9). The median length of stay (LOS) was 13 days (11-18). More than half of patients were clinical stage T1-T2 (70.7%) and grade group 1-2 (78%). Mean operative time was 450 min (360-530). The median estimated blood loss (EBL) was 800 mL (550-1,500). Three intraoperative complications occurred: 1 vessel injury (5.9%), 1 rectal injury (5.9%) and 1 ureteric orifice injury (5.9%). Only 2 patients (11.8%) were converted to open surgery, 1 was due to major vessel injury and another one was due to intraoperative abnormal EKG. Only one patient (5.9%) was dead in this study. The median catheter time was 16 days (9-24). Postoperative complications were 7 urine leakage (43.8%), 3 developed urinary tract infection (UTI) (17.6%) and 1 hemorrhagic shock (6.3%). 10 patients had incontinence (62.5%) after 1-year follow-up. Overall positive surgical margin status was 50% (20% for pT2 and 100% for pT3).

Conclusion: Although LRP in our practice gives many benefits, rarely mortality, complications mostly minor and could be managed conservatively, positive surgical margin and continence rate were slightly higher compared to other series. Our practice skills and surgical technique still needs to gain more experienced and further improvement. To help in decreasing rates of the negative oncological and improve postoperative quality of life and overall survival of the patients.

Keywords: Prostate cancer, Laparoscopic surgery, Radical prostatectomy, Complications

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