Is Laparoscopic Radical Prostatectomy after Transurethral Prostatectomy Appropriated?

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Objective: *To evaluate the appropriateness and morbidity of laparoscopic radical prostatectomy (LRP) in patients who had previous trans urethral prostatectomy (TURP).*
Material and Method: *From February 2005 to February 2006, 27 patients with clinical localized prostate cancer underwent LRP with the same technique by a single surgeon. Nineteen patients were diagnosed with trans rectal ultrasound guided biopsy (TRUSBX) and eight patients were diagnosed with TURP. Operative data and pathological outcomes were evaluated between the two group.*
Results: *Mean operative time and blood loss in TURSBX group were 233 minutes and 610 ml while those in TURP group were 251 minutes and 812 ml, respectively. These were not significantly different (all p valve > 0.1). There was no significant complication or mortality in either groups. LRP could achieve high free margin rate. Of 19 patients with pathological localized disease, 17 (89.4%) had free margin. It was found in12 of 14 patients (85.7%) in TRUSBX group and in all patients in the TURP group.*
Conclusion: *LRP is appropriate to undergo in prostate cancer patients with previous TURP. LRP after TURP did not have a higher morbidity than LRP after TRUSBX and did not compromise free margin rate.*

Keywords: *Prostate, Prostatic carcinoma, Laparoscopic radical prostatectomy*

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Since overwhlming prostate cancer awareness, most patients have been diagnosed with trans rectal ultrasound guided biopsy (TRUSBX). Many patients were found with clinical localized disease. Radical prostatectomy is an option for therapy. It is well known that radical prostatectomy for localized prostate cancer achieves excellent results[1-3]. Recently, laparoscopic radical prostatectomy (LRP) has been carried out and has become a standard treatment[4,5]. Early outcomes were the same as conventional radical prostatectomy[5,6]. Nevertheless, the techniques of LRP are more difficult than conventional radical prostatectomy and urologists need a learning period[7]. Very few data of LRP in the patients with previous trans urethral prostatectomy (TURP) were in the literature. Most LRP were carried out in patients diagnosed from TRUSBX including Thai men[8,9]. However, some patients with localized disease were diagnosed by pathological specimen of TURP[3]. Generally, conventional radical prostatectomy after TURP is usually more difficult than that after TRUSBX. Thus, LRP in the patients who previously underwent TURP is questioned. The present study was conducted retrospectively.

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Material and Method

From February 2005 to February 2006, 31 patients who underwent LRP with the same technique by the same surgeon at Siriraj Hospital were studied. All patients had clinical localized adenocarcinoma of prostate gland and negative bone scan. Twenty two patients were diagnosed from TRUSBX while nine patients were diagnosed from TURP. Usually, PSA testing and digital rectal examination (DRE) would be used for diagnosis of prostate cancer with TRUSBX in Thai men. In patients with lower urinary tract symp-

toms (LUTS), PSA testing and DRE were used as well. If there was an abnormal PSA or abnormal DRE or both, TRUSBX would be applied before considering therapy for benign prostatic hyperplasia (BPH) such as medical treatment or TURP. Thus, most patients would be diagnosed from TRUSBX. However, some patients with previous TURP were diagnosed with prostate cancer somewhere else and referred for further treatment. Usually, LRP would be carried out at least 6 weeks after TURP, the same as conventional radical prostatectomy. Before LRP in patients with previous TURP, cystoscopy was used to evaluate anatomy of prostatic apex, prostatic fossa, bladder neck and ureteral orifice. The technique of LRP was transperitoneal approach with 5 instrument ports. Prostate gland, bilateral seminal vesicle and bilateral pelvic lymphnode were laparoscopicly dissected and removed via camera port at the umbilicus. All anastomotic sutures were performed intracorporeally. Four patients in early experiences who were converted to open surgery were excluded. Thus, 27 patients were used to evaluate the morbidity and pathological outcomes of LRP after TURP. The patients were divided into 2 groups. The first group had diagnosis from TRUSBX in 19 patients. The second group had diagnosis from TURP in 8 patients. Patient characteristics of age, pretreatment PSA and Gleason score were compared between the 2 groups. Operative data and pathological specimen were also evaluated between the 2 groups. Mean data were compared with Anova test. All data were analyzed by SPSS program. A p-value of less than 0.05 was considered significant.

Results

Characteristic of age, pretreatment PSA and Gleason score in 19 patients of the TRUSBX group and 8 patients of the TURP group are shown in Table 1. Only the mean age in the TURP group was significantly higher than those in the TRUSBX group (p valve < 0.01). Pretreatment PSA and Gleason score in both groups were not significantly different (p valve = 0.13 and 0.40, respectively) and all patients in both groups had clinical localized T stage. Thus, clinical features between the 2 groups were comparable. Table 2 shows the outcomes of operative data between the two groups. The presented data showed that mean operative time of patients in the TURP group was a little longer than patients in the TRUSBX group. This was not statistical significantly different (p value = 0.48). Patients in the TURP group had higher blood loss and blood replacement than patients in the TRUSBX group. These also were not statistically significantly different (p value = 0.18 and 0.41, respectively). Thus, operative parameters of LRP after TURP were not different from LRP after TRUSBX. In both groups, there was no significant complication and no mortality. Only one patient in the TURP group had prolonged urinary leakage and was treated conservatively. The presented data suggested that LRP was a safe operation even in patients with previous TURP. Duration was approximately 4 hours. Blood loss was approximately 600-700 ml. More than 50% of patients did not need blood replacement. Most patients who needed blood replacement would use only 1 unit. Table 3 shows pathological stage and margin

Table1. Patient characteristics of TRUSBX group and TURP group

Characteristics	Mean (range)		p-valve
	TRUSBX group	TURP group	
Age (year)	63.0 (47-72)	70.8 (66-76)	<0.01
Pretreatment PSA (ng/ml)	9.9 (0.6-26.9)	14.0 (7.6-24)	0.13
Gleason score	6.8 (5-8)	7.1 (6-9)	0.40

Table 2. Operative data of patients in TRUSBX and TURP group

Operative data	TRUSBX group	TURP group	p-valve
Mean operative time (min)	233 (160-360)	251 (135-360)	0.48
Mean blood loss (ml)	610 (300-1200)	812 (300-1500)	0.18
Mean blood replacement (unit)	0.8 (0-4)	1.25 (0-4)	0.41
Number patients without blood replacement	63.2%	50%	

Table 3. Pathological results of TRUSBX and TURP group

Pathological stage	No patients in TRUSBX group		No patients in TURP group	
	Free margin	Positive margin	Free margin	Positive margin
Localized	12 (85.7%)	2 (14.3%)	5 (100%)	none
Locally advanced	2 (40%)	3 (60%)	none	3 (100%)

status. Of 27 patients, 19 patients had pathological localized disease and eight patients had pathological locally advanced disease. Regarding margin status in patients with pathological localized disease, of 19 patients with LRP, 17 (89.4%) had free margin. Twelve of 14 patients (85.7%) in the TRUSBX group and all patients in the TURP group had free margin. On the other hand, patients with pathological locally advanced disease had a high positive margin rate in both the TRUSBX and TURP group. This data suggested that LRP after TURP did not compromise free margin rate in patients with pathological localized disease. For results of incontinence, 18 of 19 patients in the TRUSBX group had good urinary control. One patient had some degree of stress incontinence. For patients in the TURP group, all had good urinary control. However, one patient in the TURP group had mild degree of anastomotic stricture. This patient was treated with dilatation. For potency, it was difficult to evaluate since bilateral nerve sparing was not done in many patients since they had a high risk of prostate cancer. Furthermore, some patients had impotence before surgery. However, some patients still had potency after LRP in both groups.

Discussion

Most patients with radical prostatectomy in the literature were diagnosed from TRUSBX[8,9]. However in Thailand, some patients were still being diagnosed from TURP. Generally, radical prostatectomy in patients with previous TURP is more difficult than in patients who were diagnosed with TRUSBX because of adhesion from a previous surgery. Recently, the trend of LRP has increased. Thus, LRP in the patients with previous TURP was questioned. The present study showed that LRP after TURP did not have higher morbidity than LRP after TRUSBX by the same surgeon. Operative time, blood loss, blood replacement and other morbidity were not significantly different. There was no major complication or mortality in both groups. Almost all patients in the present study had good urinary control. Only one patient in the TRUSBX group had stress incontinence and another patient in the TURP group had mild stricture. This suggested that LRP after TURP is a safe procedure. However, to minimize adhesion, it needs at least 6 weeks after TURP to undergo LRP. For pathological outcome, LRP could achieve a high free margin rate of almost 90% in pathological localized disease. Importantly, LRP after TURP did not compromise the free margin rate compared to LRP after TRUSBX. This confirmed that LRP in patients who had previous TURP is appropriate. In the series of western countries, LRP become a standard therapy and widespread for clinical localized prostate cancer[4-6]. Operative, pathological and functional outcomes of LRP appeared to approximate those of conventional radical prostatectomy. However, longer follow up data are needed for long term comparison to conventional radical prostatectomy. At present, LRP are being performed in many centers in Thailand and the trend is increasing.

The present study had some limitations since the number of patients in the TURP group was small since most patients with clinical localized disease would be diagnosed from TRUSBX. However, it could be comparable since all were operated on by a single surgeon in the same period. For the pathological locally advanced disease, free margin rate was low since tumor had progressed out of prostatic capsule and can not be totally removed by surgical method. Adjuvant therapy should be used in these patients. Thus, patient selection is an important issue for the best outcome for individual patients.

Conclusion

LRP has become a standard treatment for localized prostate cancer. LRP is appropriate in the patients with previous TURP. LRP after TURP did not have a higher morbidity than LRP after TRUSBX and did not compromise the free margin rate.

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การทำผ่าตัด Laparoscopic Radical Prostatectomy ในผู้ป่วยหลังการผ่าตัด Transurethral prostatectomy เป็นการผ่าตัดที่เหมาะสมหรือไม่?

สุนัย ลีวันแสงทอง, ธวัชชัย ทวีมั่นคงทรัพย์

วัตถุประสงค์: *เพื่อศึกษาถึงความเหมาะสมและอัตราเสี่ยงของการผ่าตัด laparoscopic radical prostatectomy (LRP) ในผู้ป่วยที่เคยได้รับการผ่าตัด transurethral prostatectomy (TURP) มาแล้ว*

วัสดุและวิธีการ: *ตั้งแต่กุมภาพันธ์ พ.ศ. 2548 ถึงกุมภาพันธ์ พ.ศ. 2549 ได้ศึกษาผู้ป่วยมะเร็งต่อมลูกหมากในระยะ localized ทางคลินิก จำนวน 27 ราย ที่ได้รับการผ่าตัด LRP โดยเทคนิคที่เหมือนกันจากศัลยแพทย์คนเดียวกัน ผู้ป่วย 19 ราย และ 8 ราย ได้รับการวินิจฉัยว่าเป็นโรคมะเร็งต่อมลูกหมากจากการทำ transrectal ultrasound suited biopsy (TRUSBX) และ TURP ตามลำดับ ข้อมูลการผ่าตัดและผลทางพยาธิวิทยาได้ถูกนำมาเปรียบเทียบในผู้ป่วยทั้ง 2 กลุ่ม*

ผลการศึกษา: *ในกลุ่มผู้ป่วย TRUSBX พบว่ามีระยะเวลาผ่าตัดเฉลี่ย 233 นาที และเสียเลือดเฉลี่ย 610 มิลลิลิตร เมื่อเปรียบเทียบกับกลุ่มผู้ป่วย TUR-P ที่มีระยะเวลาผ่าตัดเฉลี่ย 251 นาที และเสียเลือดเฉลี่ย 812 มิลลิลิตร พบว่าทั้งหมดไม่มีความแตกต่างกันทางสถิติ (p-value ทั้งหมด > 0.1) ไม่พบโรคแทรกซ้อนและการตายจากการผ่าตัดในผู้ป่วยทั้ง 2 กลุ่ม ที่สำคัญในผู้ป่วย 19 รายที่มีผลทางพยาธิเป็นระยะ localized พบว่า ผู้ป่วย 17 ราย หรือ 89.4 เปอร์เซ็นต์ มีการตัดมะเร็งออกได้หมด (free margin) ทั้งนี้เป็นผู้ป่วย 12 ราย ใน 14 รายหรือ 85.7 เปอร์เซ็นต์ ของกลุ่ม TRUSBX มี free margin ส่วนในกลุ่ม TURP พบ free margin ในผู้ป่วยทุกราย*

สรุป: *การผ่าตัด LRP ในผู้ป่วยมะเร็งต่อมลูกหมากที่ได้รับการทำผ่าตัด TURP มาแล้ว เป็นสิ่งที่สามารถทำได้และเหมาะสม อัตราเสี่ยงและโรคแทรกซ้อนไม่ได้สูงกว่าการผ่าตัด LRP ทั่ว ๆ ไป การผ่าตัด LRP หลังการผ่าตัด TURP ไม่มีผลลบต่ออัตรา free margin ในผลทางพยาธิวิทยา*