# Is Radical Prostatectomy in Thai Men a High Morbidity Surgery for Localized or Locally Advanced Prostate Cancer?

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***Objective:*** *To assess the morbidity of radical prostatectomy in Thai patients with localized or locally advanced prostate cancer.*
***Material and Method:*** *A total of 151 patients with prostate cancer underwent radical prostatectomy at Faculty of Medicine Siriraj Hospital, Bangkok, between 1994 to 2003. Operative complications and long term morbidity were evaluated with clinical stage T1, T2 and T3.*
***Results:*** *Mean operative duration, blood loss and blood transfusion were 162 minutes (range 71-540), 1088 ml (range 200-4000) and 1.7 unit (range 0-12), respectively. Of 151 patients, 139 (92.6%) did not have perioperative complications and 42 (27.8%) did not have blood transfusion. Of 12 patients with morbidity, all patients were safely managed. There was no mortality. Of 140 patients with follow up results, 131 (93.7%) had no incontinence. Seven patients had mild stress incontinence. Only 2 patients had a significant incontinence. Eight patients had stricture of anatomosis. Strictures were simply managed with dilatation. There was no significant difference of operative time, blood loss, blood transfusion, incontinence and stricture parameters among clinical T stage (all p value > 0.05).*
***Conclusion:*** *Radical prostatectomy in Thai men is not a high morbidity surgery in terms of immediate complications and long term morbidity. For clinical T3 prostate cancer, morbidity is not significantly higher than in patients with clinical localized disease.*

***Keywords:*** *Prostate, Prostatic neoplasm, Radical prostatectomy*

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At present, prostate cancer in Thailand has been changed for a decade. More prostate cancer awareness with prostate-specific antigen (PSA) and digital rectal examination (DRE) causes more prostatic biopsy procedures resulting in more early detection with clinical localized prostate cancer. Since there are many options for localized prostate cancer and each option has different side effects or different morbidity, the decision for therapy would depend on the outcomes against morbidity. Radical prostatectomy is one option therapy for clinical localized disease. Overwhelming popularity of radical prostatectomy has been addressed in Western countries for more than two decades[1]. In Asia, where the incidences of prostate cancer are less than in the west, radical prostatectomy has also gained popularity[2]. This includes Thailand due to more localized prostate cancer being detected[3]. It is well known that the results of radical prostatectomy are excellent in terms of cancer control and survival[4]. However, there is morbidity of radical prostatectomy shown in Western series[5-7]. To assess the morbidity of radical prostatectomy in Thai patients, the present retrospective study was conducted.

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## Material and Method

A total of 151 patients with prostate cancer underwent radical prostatectomy at Faculty of Medicine Siriraj Hospital, Bangkok, from 1994 to 2003. Data of all patients were reviewed in both inpatient records for operative surgery and outpatient records for follow-up results by computerized database. Of 151 patients, 128 (84.9%) patients were diagnosed by transrectal ultrasound guide biopsy (TRUS). Abnormal prostate-specific antigen (PSA) level of more than 4 ng/ml and abnormal digital rectal examination (DRE) were criteria for prostatic biopsy. Twenty-three patients (15.1%) were diagnosed with incidental finding from transurethral resection prostatectomy (TURP). Gleason Score was used to classify for histological grading. The 1997 TNM classification was used for staging[8]. All patients had negative bone scan. Options of therapies were made after discussion of results and morbidity between patients and physicians including urologist, radiotherapist or oncologist. Of 151 patients, 148 underwent retropubic radical prostatectomy. If the patients had low risk prostate cancer, bilateral nerve sparing radical prostatectomy was performed. Three underwent laparoscopic radical prostatectomy. Two of them were converted to retropubic radical prostatectomy. After radical prostatectomy, PSA was used to monitor for follow up. Mean time of follow up in the present series was 30 months (median = 27 months, range = 10-85 months). Eleven patients were lost to follow up. Thus, 140 patients were evaluated for follow up results. Results in terms of cancer control and survival were reported[9]. Data of patients' characteristic information, operative data, operative morbidity, long term morbidity and complications were evaluated with clinical stage by frequency, tables and percentage. Chi-squared test was used to compare the categorical variables. Statistical analysis (mean, median, range) was calculated by SPSS program.

## Results

Mean age was 66.2 years (range 51 to 82 years). Table 1 shows the patients' characteristic of clinical T stage, preoperative PSA and tumor grading. The mean and median of preoperative PSA were 27.3 ng/ml and 16 ng/ml, respectively (range 1.2 to 225 ng/ml). Table 2 shows operative data of radical prostatectomy. The present data shows that radical prostatectomy is an operation taking less than 3 hours, blood loss approximately 1000 ml and less than two units of blood transfusion. Table 3 shows immediate complications. Of 151 patients with radical prostatectomy, 139 (92.6%) did not have perioperative complications. Of 12 patients with morbidity, all patients were safely managed. There was no mortality in the present series. All patients with significant bleeding were operated on in the authors' early experiences. At present, bleeding has become much less as we gain more experiences. Of 151 patients, 42 (27.8%) did not have a blood transfusion.

Radical prostatectomy is an operation for clinical localized prostate cancer (clinical T1 or clinical T2). However, some patients with clinical T3 had potential to have benefit from radical prostatectomy in terms of local control or survival when combined to other adjuvant therapy[10]. In our hospital policy, an option of therapy was discussed in terms of outcomes and morbidity between patients and physicians. The patients finally made the decisions. Of 151 patients with radical prostatectomy, 58, 63 and 52 had clinical T1, clinical T2 and clinical T3, respectively. Table 4 shows the immediate operative data of radical pros-

**Table 1.** Distribution of patients' characteristic in clinical T stage, preoperative PSA and tumor grading

| Patients' characteristic | Number patients (%) (N=151) |
|---|---|
| Clinical T stage | |
| T1 | 58 (38.4) |
| T2 | 63 (41.7) |
| T3 | 30 (19.9) |
| Preoperative PSA (ng/ml) | |
| 0-4 | 8 (5.3) |
| More than 4-10 | 37 (24.5) |
| More than 10-20 | 43 (28.5) |
| More than 20-50 | 37 (24.5) |
| More than 50 | 18 (11.9) |
| Missing | 8 (5.3) |
| Gleason Score | |
| 2-4 | 20 (13.2) |
| 5-7 | 107 (70.9) |
| 8-10 | 24 (15.9) |

**Table 2.** Operative data of a total 151 radical prostatectomy

| Operative data | Mean | Median | Range |
|---|---|---|---|
| Operative time (minutes) | 162.0 | 150 | 71-540 |
| Blood loss (ml) | 1088.0 | 1000 | 200-4000 |
| Blood transfusion (units) | 1.7 | 1 | 0-12 |
| Hospital stay (days) | 10.8 | 9 | 4-30 |

tatectomy among clinical T stage. Comparing the patients' characteristic parameters of age, preoperative PSA level, Gleason Score, operative time, blood loss and blood transfusion, the authors found that only preoperative PSA level had a significant difference (all p values < 0.002). There was no significant difference of operative time, blood loss, blood transfusion and hospital stay among clinical T stage (all p value > 0.05).

Long term morbidity of incontinence and impotence after radical prostatectomy were concerned. Results of postoperative incontinence were acceptable as shown in Table 5. Of 140 patients who had follow up results, 131 (93.7%) had no incontinence. Seven patients had mild stress incontinence. Only two patients had significant incontinence. They needed diapers. Of 140 patients, 8 patients had stricture of anatomosis. The strictures were simply managed with dilatation. The risks of incontinence and stricture of anatomosis among patients with clinical stage T1, T2 and T3 are also shown in Table 5. Of 53 patients with clinical T1, 2 (3.7%) and 3 (5.6%) had incontinence and stricture of anatomosis, respectively. Of 60 patients with clinical T2, 4 (6.6%) and 4 (6.6%) had incontinence and stricture of anatomosis, respectively. Of 27 patients with clinical T3, 3 (8.1%) and 1 (3.7%) had incontinence and stricture of anatomosis, respectively. Comparing risks of incontinence and stricture of anatomosis among patients with clinical T1, T2 and T3, no significant differences were found (all p values > 0.2). The present data suggested that risks of incontinence and stricture of anatomosis in the patients with clinical T3 were not higher than patients with clinical T1 or patients with clinical T2. Potency after radical prostatectomy was difficult to evaluate in the present series. A lot of patients had impotence before surgery. Bilateral nerve sparing radical prostatectomy was operated on in selected patients who had low PSA and low Gleason Score. Some patients still had potency in bilateral nerve sparing radical prostatectomy.

**Table 3.** Immediate complications in a total of 151 patients with radical prostatectomy

| Complications | Number patients (%) |
|---|---|
| Significant bleeding up to 2000 ml | 5 (3.2) |
| Wound infection | 3 (1.8) |
| Prolonged lymphatic leakage | 2 (1.2) |
| Prolonged urinary leakage | 1 (0.6) |
| Scortal hematoma | 1 (0.6) |
| No immediate complication | 139 (92.6) |

## Discussion

The outcome of radical prostatectomy has been well known to be excellent. However, this operation is a major surgery, morbidity and long term morbidity should be concerned. The morbidity in the

**Table 4.** Means and standard deviations of patient's characteristic and operative data among clinical T stage

| Parameters | Clinical T1 | Clinical T2 | Clinical T3 |
|---|---|---|---|
| Age (years) | 66.4 (±7.6) | 66.7 (±5.8) | 64.8 (±6.7) |
| PSA level (ng/ml) | 10.6 (±7.5) | 25.5 (±25.7) | 62.0 (±62.7) |
| Gleason Score | 6.0 (±1.4) | 6.5 (±1.5) | 7.2 (±1.4) |
| Operative time (minutes) | 156.9 (±79.1) | 159.8 (±64.9) | 176.0 (±51.1) |
| Blood loss (ml) | 931.98 (±590.8) | 1153.2 (±775.8) | 1253.3 (±565.5) |
| Blood transfusion (units) | 1.3 (±1.5) | 1.9 (±2.0) | 2.0 (±1.7) |
| Hospital stay (days) | 10.8 (±5.3) | 11.1 (±5.3) | 10.2 (±4.5) |

**Table 5.** Risks of incontinence and stricture of anatomosis after radical prostatectomy

| Side effects | Number patients (%) | | | |
|---|---|---|---|---|
| | Clinical T1 | Clinical T2 | Clinical T3 | Total |
| Incontinence | 2 (3.7) | 4 (6.6) | 3 (8.1) | 9 (6.3) |
| No incontinence | 51 (96.3) | 56 (93.4) | 24 (91.9) | 131 (93.7) |
| Stricture of anatomosis | 3 (5.6) | 4 (6.6) | 1 (3.7) | 8 (5.7) |

present series was acceptable. More than 92% of patients did not have immediate complications. Furthermore, 12 patients with morbidity were safely managed. There was no mortality. Radical prostatectomy is an operation that needs an experienced surgical team. In the authors' early experience, bleeding was a major morbidity. As we have gained more experience, bleeding has been less. Median blood transfusion was 1 unit and more than 27% of patients did not have a blood transfusion. In the patients who had auto blood transfusion, they did not need a blood transfusion from other people. This could decrease the risks of blood transmitted infections. Not only blood loss, but also duration of surgery was decreased when we gained more experience. Median duration of surgery was 2 hours and 30 minute. This was not too long for major surgery. There were no complications of anesthesia in the present series. The present data suggested that radical prostatectomy does not have a high morbidity in terms of immediate complications.

For long term morbidity of incontinence and stricture of anastomosis, the authors found that the risks of incontinence and stricture were acceptable. More than 93% of patients had no incontinence. Importantly, most patients who had incontinence had mild stress incontinence. The patients could soon be back to normal living as usual. Only 2 patients from 151 patients had significant incontinence that bothered their quality of life. Eight patients from 151 patients had stricture of anastomosis. Fortunately, it could be treated with dilatation. However, some patients needed to be dilated more than one time. Overall the present results of incontinence and stricture were satisfactory as well as Western series. (6) Impotence is another concern for patients with radical prostatectomy. It was a disadvantage issue for the present series. Impotence was very difficult to evaluate in the presented patients since lots of the patients had some degree of impotence before surgery. Bilateral nerve sparing radical prostatectomy underwent in selected patients who had low risk prostate cancer and good potency. PSA less than 10 ng/ml, low Gleason Score and clinical T1 or T2 were criteria for bilateral nerve sparing radical prostatectomy. However, some patients maintained potency status after bilateral nerve sparing radical prostatectomy.

Radical prostatectomy is standard therapy for clinical localized disease. For clinical T3, radical prostatectomy is an option for selected patients. Benefit should be discussed against morbidity that clinical T3 would have a higher morbidity than clinical localized disease. Comparing morbidity among clinical T1, T2 and T3, the authors found that there was no significantly different morbidity in terms of both immediate complications and long term morbidity. For blood loss, radical prostatectomy in the patients with clinical T3 seemed to be more than in the patients with clinical T1 and clinical T2. However, this was not statistical significant difference. For long term morbidity, incontinence and stricture in the patients with clinical T3 was less than 10%. These were also not significantly different.

**Conclusion**

Radical prostatectomy in Thai men is not a high morbidity surgery in terms of immediate complications and long term morbidity. It maintains an excellent option for clinical localized prostate cancer. For clinical T3 prostate cancer, radical prostatectomy can be done in selected patients. Morbidity in the patients with clinical T3 is not significantly higher than in the patients with clinical localized disease in terms of immediate complications and long term morbidity.

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## *การผ่าตัดต่อมลูกหมากออกทั้งหมดในผู้ป่วยชายไทยที่เป็นโรคมะเร็งต่อมลูกหมากระยะที่ยังไม่ลุกลามและระยะที่ลุกลามเฉพาะที่มีความเสี่ยงสูงหรือไม่*

***สุนัย ลีวันแสงทอง, สุชาย สุนทราภา, ไชยยงค์ นวลยง, สิทธิพร ศรีนวลนัด, ธวัชชัย ทวีมั่นคงทรัพย์, ธีระพล อมรเวชสุกิจ***

***วัตถุประสงค์****: เพื่อศึกษาความเสี่ยงของการผ่าตัดต่อมลูกหมากออกทั้งหมด (radical prostatectomy) ในชายไทยที่เป็นมะเร็งต่อมลูกหมากในระยะที่ยังไม่ลุกลามหรือระยะลุกลามเฉพาะที่*

***วัสดุและวิธีการ****: ศึกษาผู้ป่วยมะเร็งต่อมลูกหมาก จำนวน 151 คนที่ได้รับการผ่าตัดต่อมลูกหมากออกทั้งหมดในโรงพยาบาลศิริราช ตั้งแต่ปี พ.ศ. 2537 จนถึงปี พ.ศ. 2546 ความเสี่ยงและภาวะแทรกซ้อนในระยะผ่าตัด หรือหลังผ่าตัด และผลข้างเคียงระยะยาว ได้ถูกนำมาวิเคราะห์กับระยะของโรคทางคลินิก $T_1$, $T_2$ และ $T_3$*

***ผลการศึกษา****: ระยะเวลาในการผ่าตัดโดยเฉลี่ย 162 นาที เสียเลือดขณะผ่าตัดเฉลี่ย 1,088 มิลลิลิตร ได้รับการถ่ายเลือดเฉลี่ย 1.7 ยูนิต ในจำนวนผู้ป่วย 151 ราย พบว่า 139 ราย (92.6%) ไม่มีภาวะแทรกซ้อนในขณะผ่าตัดหรือหลังผ่าตัด ผู้ป่วยจำนวน 42 ราย (27.8%) ไม่จำเป็นต้องได้รับการถ่ายเลือด ผู้ป่วย 12 ราย ที่มีภาวะแทรกซ้อนสามารถได้รับการแก้ไขอย่างปลอดภัย ไม่มีผู้ป่วยรายใดเสียชีวิตจากการผ่าตัด ในจำนวนผู้ป่วย 140 ราย ที่ได้รับการติดตามผลการรักษาพบว่า 131 ราย (93.7%) สามารถกลั้นปัสสาวะได้ ผู้ป่วย 7 รายกลั้นปัสสาวะไม่ได้แบบ Stress ซึ่งเป็นเพียงเล็กน้อย มีผู้ป่วยจำนวน 2 ราย ที่มีภาวะการกลั้นปัสสาวะไม่ได้อย่างชัดเจนที่รบกวนชีวิตประจำวัน มีผู้ป่วยจำนวน 8 ราย ที่มีภาวะ การอุดกั้นของรอยต่อระหว่างกระเพาะปัสสาวะและท่อปัสสาวะ แต่สามารถรักษาโดยง่ายโดยการขยายท่อปัสสาวะ เมื่อเปรียบเทียบความเสี่ยงของการผ่าตัดและผลข้างเคียงในระยะยาวของการผ่าตัดในผู้ป่วยระยะของโรคทางคลินิก $T_1$, $T_2$ และ $T_3$ พบว่าไม่มีความแตกต่างกัน*

***สรุป****: การผ่าตัดต่อมลูกหมากออกทั้งหมดในผู้ป่วยชายไทยที่เป็นมะเร็งต่อมลูกหมาก ไม่เป็นการผ่าตัดที่มีความเสี่ยงสูงในเรื่องของภาวะแทรกซ้อนหลังผ่าตัดและผลข้างเคียงระยะยาว การผ่าตัดต่อมลูกหมากออกทั้งหมดในผู้ป่วยระยะของโรคทางคลินิก $T_3$ ไม่ได้มีความเสี่ยงมากกว่าการผ่าตัดลูกหมากออกทั้งหมดในผู้ป่วยระยะของโรคทางคลินิก $T_1$ และ $T_2$*