Original Article

Outcomes of Radical Prostatectomy in Thai Men with Prostate Cancer

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OBJECTIVE: Radical prostatectomy remains the standard treatment for early prostate cancer. Few data in the literature are from South East Asia. This study was conducted to evaluate the outcome of radical prostatectomy in Thai men.

METHODS: A total of 151 patients with prostate cancer underwent radical prostatectomy at Siriraj Hospital, Bangkok, between 1994 and 2003. Clinical staging, preoperative prostate-specific antigen (PSA) and Gleason score were evaluated with pathological stage and margin status. Follow-up PSA monitoring and survival were analysed.

RESULTS: Of 121 patients with clinical localized disease, 79 (65.3%), 40 (33.1%) and two (1.6%) had localized, locally advanced and metastatic disease, respectively, on pathology. The chance of localized disease with a preoperative PSA of 10 ng/mL or less, more than 10–50 ng/mL and more than 50 ng/mL was 75.5%, 50% and 12.5%, respectively (all $p < 0.001$). The chance of localized disease with a Gleason score of 2–4, 5–7 and 8–10 was 85%, 55.1% and 20.8%, respectively (all $p < 0.02$). Mean follow-up was 30 months. Among 140 evaluable patients, 51 (36.4%) had adjuvant therapy and 136 (97.1%) had undetectable PSA without clinical progression. The cumulative PSA progression-free survival among patients with pathological T1N0, T2N0 and T3N0 disease was 0.83 at 82 months, 0.48 at 85 months and 0.31 at 57 months, respectively.

CONCLUSION: Radical prostatectomy in Thai men shows excellent results. The trend is the same as in Western series. The chance of organ-confined disease and free margin was high in patients with clinical T2 or less, PSA less than 10 ng/mL and low Gleason score. PSA progression-free survival was high in patients with organ-confined disease. [*Asian J Surg* 2005;28(4):286–90]

Key Words: radical prostatectomy, Thai

Introduction

Radical prostatectomy has been a standard treatment for clinical localized prostate cancer for more than a decade[1] with excellent results.[2–5] Since the incidence of prostate cancer in Asia is lower than in Western countries,[6] most data in the literature are from the West, although some are from East Asia.[7] To our knowledge, few data on radical prostatectomy have been published on Asian men in the Southeast Asia region including Thailand. At present, not only the incidence but also early stage prostate cancer is increasing in Thailand.[8] For patients with early stage prostate cancer, radical prostatectomy has become the preferred therapy. To determine the outcomes of radical prostatectomy in Thailand, this retrospective descriptive study was done.

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Patients and methods

Between 1994 and 2003, 151 patients with prostate cancer underwent radical prostatectomy at Siriraj Hospital, Bangkok. A computerized database was established. The data for all patients were reviewed from both inpatient records for surgery and outpatient records for follow-up results. Only seven underwent radical prostatectomy during 1994–1998, but from 1999 to May 2003, radical prostatectomy was performed in 144 patients. All prostate cancers were adenocarcinoma graded using Gleason score. Of 151 patients, 128 (84.8%) patients were diagnosed by transrectal ultrasound (TRUS)-guided biopsy. Abnormal prostate-specific antigen (PSA; > 4 ng/mL) and abnormal digital rectal examination (DRE) were criteria for prostatic biopsy. Twenty-three patients (15.2%) were diagnosed from incidental findings at transurethral resection of the prostate (TURP). The 1997 TNM classification was used for staging.[9] All patients had a negative bone scan. Therapeutic options were discussed between patients and physicians including a urologist, radiotherapist or oncologist. A total of 148 patients underwent retropubic radical prostatectomy. If a patient had low-risk prostate cancer, bilateral nerve sparing radical prostatectomy was performed. Three patients underwent laparoscopic radical prostatectomy, two of whom were converted to retropubic radical prostatectomy. After radical prostatectomy, PSA was monitored during follow-up. If PSA was rising, clinical status was evaluated. Adjuvant therapy was used for biochemical failure or clinical progression. Mean follow-up in our series was 30 months (median, 27 months; range, 10–85 months). Eleven patients were lost to follow-up and 140 patients were evaluated for follow-up. Patient characteristics were evaluated. Preoperative PSA, tumour grade and clinical stage were analysed according to pathological stage and margin status. Cancer control was evaluated in terms of last PSA status, PSA progression-free survival, biochemical failure, clinical progression and cancer-specific survival. SPSS (SPSS Inc, Chicago, IL, USA) was used for analysis, with Chi-squared test to compare categorical variables and Kaplan-Meier to calculate survival.

Results

Mean age was 66.2 years (range, 51–82 years). Only one patient was more than 80 years old. The mean and median of preoperative PSA were 27.3 and 16 ng/mL, respectively (range, 1.2–225 ng/mL). Table 1 shows the distribution of symptoms and signs, preoperative PSA, tumour grade and clinical T stage. Of the 151 patients, 81 (53.6%), 62 (41.1%) and eight (5.3%) had pathological localized, locally advanced and metastatic disease, respectively. Of 121 patients with clinical localized disease, 79 (65.3%), 40 (33.1%) and two (1.6%) had pathological localized, locally advanced and metastatic disease, respectively. On the other hand, of 30 patients with clinical T3 disease, two (6.7%), 22 (73.3%) and six (20%) had pathological localized, locally advanced and metastatic disease, respectively. Table 2 shows the correlation between preoperative PSA and pathological stage. The chance of localized disease was 75.5%, 50% and 12.5% at a preoperative PSA of 10 or less, more than

Table 1. Distribution of symptoms and signs, preoperative prostate-specific antigen (PSA), tumour grade (Gleason score) and clinical T stage

	n (%)
Symptoms and signs	
No symptoms	39 (25.8)
Lower urinary tract symptoms	106 (70.2)
Urinary retention	4 (2.6)
Haematuria	2 (1.3)
Preoperative PSA (ng/mL)	
0–4	8 (5.3)
> 4–10	37 (24.5)
> 10–20	43 (28.5)
> 20–50	37 (24.5)
> 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)
Clinical T stage	
T1	58 (38.4)
T2	63 (41.7)
T3	30 (19.9)

Table 2. Correlation of preoperative prostate-specific antigen (PSA) and pathological stage

Preoperative PSA (ng/mL)	Pathological stage, *n*		
	Localized	Locally advanced	Metastasis
≤ 10	34	11	0
> 10–20	20	21	2
> 20–50	20	13	4
> 50	2	15	1

Table 3. Correlation of Gleason score and pathological stage

Gleason score	Pathological stage, *n*		
	Localized	Locally advanced	Metastasis
2–4	17	2	1
5–7	59	44	4
8–10	5	16	3

10–50 and more than 50 ng/mL, respectively (all $p < 0.001$). These data suggest that lower preoperative PSA indicates a higher chance of localized disease. Table 3 shows the correlation between Gleason score and pathological stage. The chance of localized disease in patients with a Gleason score of 2–4, 5–7 or 8–10 was 85%, 55.1% or 20.8%, respectively (all $p < 0.02$). Table 4 shows the correlation of pathological stage with margin status. Of 81 patients with pathological localized disease, 75 (92.6%) had free margin, significantly more than the 21 of 62 patients (33.9%) with pathological locally advanced disease ($p < 0.001$).

Eleven patients were lost to follow-up. Of the remaining 140, 75 (53.6%), 58 (41.4%) and seven (5%) had pathological localized, locally advanced and metastatic disease, respectively. Within 1 month after surgery, PSA level decreased to an undetectable level (< 0.2 ng/mL). It is our hospital policy that immediate adjuvant therapy be used if patients have metastatic disease, locally advanced disease with a positive margin or no decline of PSA to an undetectable level. Several adjuvant therapies are used, including radiation, hormonal therapy and combined treatments. Decisions are made after discussion between patients and physicians. Of 140 patients, 27 with pathological locally advanced disease and all seven with pathological metastatic disease had immediate adjuvant therapy. Increasing PSA after radical prostatectomy is defined as biochemical failure. Over the mean follow-up of 30 months and longest follow-up of 85 months, seven patients with pathological localized disease and 10 with pathological locally advanced disease had increasing PSA and received adjuvant therapy. Thus, 51 patients (36.3%) had adjuvant therapy in our series. Most had pathological locally advanced or metastatic disease. Of 75 patients with pathological localized disease, only seven (9.3%) had adjuvant therapy, significantly lower than the 37 patients (63.7%) with pathological locally advanced disease ($p < 0.001$). Of 51 patients receiving adjuvant therapy, 39 had bilateral orchiectomy, four had luteinizing hormone-releasing hormone agonist, five had external beam radiation and three had combination therapy with bilateral orchiectomy and external beam radiation. The Figure shows PSA progression-free survival stratified by pathological T1N0, T2N0 and T3N0 disease. Cumulative PSA progression-free survival with pathological T1N0, T2N0 and T3N0 disease was 0.83 at 82 months, 0.48 at 85 months and 0.31 at 57 months, respectively. Patients with T3 disease tended to have biochemical failure more than patients with T1 or T2 disease. However, the log rank test showed that PSA progression-free survival was not significantly different ($p = 0.804$) because follow-up was not long enough. At a mean follow-up of 30 months, the cumulative survival curves for each T stage were close to each other. These graphs tended to separate at 60 months' follow-up. Adjuvant therapy after radical prostatectomy showed excellent results in terms of PSA level and clinical status. In almost all patients, PSA decreased to an undetectable level. At the time of analysis, overall results of radical prostatectomy in this series were satisfactory. Of 140 patients, 136 (97.1%) had PSA less than 0.2 ng/mL and no clinical progression. Three patients had increasing PSA without clinical progression. However, one patient died from metastatic prostate cancer. He had T3N0M0 and a Gleason score of 8 at the time of diagnosis.

Twelve patients had morbidity: five had significant bleeding (≤ 2,000 mL), three had wound infection, two had prolonged lymphatic leakage, one had prolonged urinary leakage and one had scrotal haematoma. All patients with significant bleeding underwent radical prostatectomy early in our experience. Bleeding decreased considerably as we gained experience. There was no mortality in our series. Postoperative incontinence was acceptable: seven patients had mild stress incontinence and two had significant incontinence requiring a diaper. However, eight patients had anastomotic stricture,

Table 4. Correlation of pathological stage and margin status

Pathological stage	Free margin, *n* (%)	Positive margin, *n* (%)	Total, *n* (%)
Localized	75 (92.6)	6 (7.4)	81 (100)
Locally advanced	21 (33.9)	41 (66.1)	62 (100)
Metastasis	1 (12.5)	7 (87.5)	8 (100)

all of which were managed with dilatation. Potency after radical prostatectomy was difficult to evaluate in our series. Many patients were impotent before surgery. Bilateral nerve-sparing radical prostatectomy was used in selected patients who had a low PSA and low Gleason score. Some patients still had potency after bilateral nerve-sparing radical prostatectomy.

Discussion

Since there has been more awareness of prostate cancer among Thai men in Bangkok, our hospital has had more patients diagnosed with prostate cancer. More clinical localized disease has been detected, resulting in more radical prostatectomy. Of patients with early prostate cancer, most presented with high PSA (10–20 ng/mL), lower urinary tract symptoms, a Gleason score of 5–7 and clinical T1 or T2 disease. Since mean age was more than 60 years, most patients had coincident benign prostatic hyperplasia (BPH). Some patients who presented with BPH urinary retention had incidental diagnosis of prostate cancer at TURP at another institution and were referred to our hospital for definitive treatment.

Many studies show that men with clinical localized prostate cancer treated with radical prostatectomy might have localized, locally advanced or metastatic disease on pathology. The important factors indicating organ-confined disease are preoperative PSA, Gleason score and clinical T stage.[2–5] Our series in Thai men showed the same trends. Preoperative PSA level, Gleason score and clinical T stage were significantly different with pathological stage of disease. Our data suggested that the possibility of organ-confined disease is high when patients have a preoperative PSA level of 10 ng/mL or less, low Gleason Score and clinical T1 or T2 disease. In addition, the possibility of a free surgical resection margin was more than 90% if patients had organ-confined disease. On the other hand, patients at high risk such as those with a high preoperative PSA, high Gleason score or clinical T3 disease mostly had pathological locally advanced or metastatic disease, and a positive margin was common in these patients.

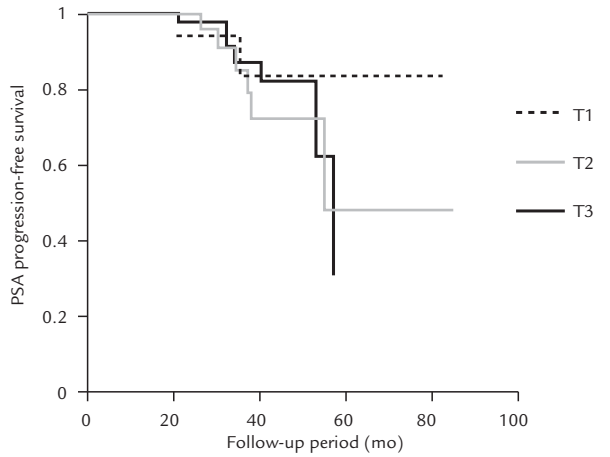

Figure. Prostate-specific antigen (PSA) progression-free survival stratified by pathological T stage (all no metastasis).

Even though the follow-up in our series was not as long as in series in Western countries, the trend in survival parameters seemed to be the same as in those series. Radical prostatectomy showed excellent results in terms of PSA, PSA progression-free survival and cancer-specific survival. At a mean follow-up of 30 months, 97% of patients had undetectable PSA without clinical progression. Only one patient died of metastatic prostate cancer. PSA progression-free survival in the patients with localized disease tended to be higher than that in patients with locally advanced disease. However, it was not statistically different because of the short follow-up. In patients with biochemical failure, adjuvant radiotherapy or adjuvant hormonal therapy was used, decreasing PSA to an undetectable level in most patients.

The incidence of prostate cancer varies among different races. Prostate cancer is much less common in Asian men than in Western men.[6] However, radical prostatectomy has gained popularity in Asia, as reported from Japan.[7] Our data also showed an increase in this procedure in Thailand. Despite differences in incidence among races, the natural history or disease progression seems to be the same. The important prognostic factors are Gleason score, preoperative PSA and clinical T stage. Thai men with low PSA, low clinical T stage and low Gleason score are likely to have organ-confined disease and a low risk of biochemical failure, as also shown in series from Japan and Western countries.[2–5,7] We believe that our data provide information for decision-making for Thai or Asian men with clinical localized prostate cancer.

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