



Robotic Assisted Laparoscopic Radical Prostatectomy: When cure can come with quality of life.

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Abstract

Introduction: There are many options of treatment in early prostate cancer patients. Nowadays, the patients seek treatment aiming for cure without much troublesome. Robotic Assisted Laparoscopic Radical Prostatectomy is one of them.

Objective: To evaluate oncological and functional outcome of Robotic Assisted Laparoscopic Radical Prostatectomy performed by a single surgeon's experience.

Materials and Methods: 155 patients with localized prostate cancer who underwent Robotic Assisted Laparoscopic Radical Prostatectomy were enrolled. Oncological and functional outcomes were evaluated.

Results: Within the last 48 cases, positive surgical margin rate was reported as 12.5% in pathological pT2 disease. One year after surgery, continence (pad free) rate and potency (successful sexual intercourse) rate were reported as 81.8% and 78 %, respectively.

Conclusion: Robotic Assisted Laparoscopic Radical Prostatectomy is one of the treatment options for early prostate cancer patients who aim for cure the lethal disease with good quality of life.

Keyword: radical prostatectomy, prostate cancer, robotic prostatectomy, impotency

Introduction

Prostate cancer is found more often than before in Thai male. This is due to increasing numbers of elderly people and a screening tool with PSA test. Patients with prostate cancer are seeking the treatment option, which provides them a good cancer control without much compromising of their (routine) life-style. There are many modalities of treatment for early prostate cancer patients; each has pros and cons. To date Robotic Assisted Laparoscopic Radical Prostatectomy (RALRP) is one of the gold standard treatment for early prostate cancer patients. Robotic Prostatectomy was firstly reported in Thailand in 2007[1]. Since then the numbers of such surgery has been rapidly increased[2-6]. This article is meant to summarize the oncological outcomes and functional outcomes of the RALRP.

Material and Method

Data from 155 patients with prostate cancer, who had successfully undergone RALRP by the author at the department of Surgery, Faculty of Medicine, Siriraj Hospital was retrieved. The studied protocol was approved by the Faculty's ethical committee. Perioperative data, operative results and oncological outcomes were analysed. Functional

outcomes were evaluated on 3, 6, 9, 12 months after the surgery by questionnaires of numbers of pad required and ability to have successful intercourse (SHIM scores).

Results

Average age of the patients was 66.7 years. Mean serum PSA was 18 ng/ml. The average operative time, blood loss, catheterization time and hospital stay were 156.7 minutes, 436.4 mls, 8.8 days and 7.5 days, respectively. Transfusion rate was 9%, most of them were in the first 50 cases. All data was shown in table 1.

Pathological outcomes reported positive surgical margin rate of 20.00% and 60.00% in pT2 and pT3, respectively. However, sub-group analysis has shown that in the last 48 consecutive cases the positive surgical margin in pT2 case has been reduced from 27.7% to 12.5%, having compared to the first 47 cases, as shown in table 2.

Total continence (pad free) was reported at 12.7%, 36.1%, 66.7% and 81.1% on 1st month, 3rd month, 6th month and 12th month after surgery, respectively, as shown in table 3.

59 patients with sexually active prior to the operation (SHIM scores > 20) had undergone nerve

Table 1 Dermographic Data

	Minimum	Maximum	Mean	Std.Deviation
Age (year)	49	82	66.66	7.86
PSA (ng/ml)	1.78	300	18.01	30.49
IPSS	0	26	12.32	5.72
SHIM	0	25	14.38	7.72
Prostatic weight (gm)	9.3	160	42.38	18.90
Operative time (min)	70	720	156.72	74.10
Intra operative blood loss (ml)	50	2500	436.36	358.98
Tot.days of cath insertion (day)	5	23	8.76	3.87
Hospital stay (day)	3	28	7.52	3.16

Table 2 Pathological outcomes

Staging	Number of case	% of Positive Margin
pT2	95	20%
Case no.1-47	47	27.66%
Case no.48-95	48	12.50%
pT3	60	60.00%
Case no.1-30	30	70.00%
Case no.31-60	30	50.00%

Table 3 Continence outcomes

Duration Post Operation (months)	Total Continence Rate
1	12.70%
3	36.10%
6	66.70%
12	81.10%

Table 4 Potency outcomes

Duration after surgery (months)	Full erection with sexual intercourse rate
3	15.3%
6	54.8%
9	68%
12	78%

sparing procedure. Erection with successful sexual intercourse was reported at 15.3%, 54.8%, 68% and 78% on 3rd month, 6th month, 9th month, and 12th month, respectively, as shown in table 4.

Complication was found in 19 cases (12.26%). Two patients had experience major complication including 1 pulmonary emboli and 1 pelvic collection with sepsis. All complications were reported in table 5.

Discussion

There are two major concerns of patients with prostate cancer, namely, cancer control and functional outcomes. Previously, the author had reported oncological and functional outcomes of RALRP in 112 prostate cancer patients [6]. The goal of surgery is to completely remove cancer tissue, whilst preserving continence and erectile function. In the present study has shown that a decline in the positive surgical margin rate as the author gains experience with

Table 5 Complication

N=155	Complication	Number
Major	Pulmonary Emboli	1
	Pelvic collection with sepsis	1
Minor	Stricture of anastomosis	4
	Bleeding required blood transfusion	3
	Orchitis	3
	Prolong drainage	2
	Foley catheter dislodge	2
	Pelvic collection	1
	Retention of Urine	1
	UTI	1

RALRP. It is the author's believe that with experience one can achieve a lower positive margin rate in pathological T2 cancer with RALRP than with open Radical Prostatectomy or Laparoscopic Radical Prostatectomy.

In most patients, incontinence is a major concern when considering Radical Prostatectomy.

During surgery one must be very careful to dissect around the prostatic apex. With Robotic technology, meticulous dissection and precise anastomosis can help limit scarring and inflammation, which may be beneficial to continence control. There are several surgical techniques aiming to reduce incontinence rate[7,8]. However, these surgical techniques are made independent of surgeons' experiences. To date, there has been no randomized control trial to evaluate such techniques. In the present study, the author has shown that continence rate is reasonably good, although a small proportion of the patients continue to have incontinence after 1 year. Better understanding of the anatomy and physiology could help delineate surgical techniques that may be, one day, eliminate the problem.

The promise of well-preserved erectile function is one of the driving forces behind the acceptance of RALRP. In this study, patients undergone nerve-sparing procedure can gain erection in 78% which is comparable to many studies [9-12]. With superb

visualization and meticulous dissection, the neuro-vascular bundle can be well preserved. It is essential to remember that preserving erectile function at the expense of leaving cancer cells behind do more harm than good to the patients. The author strongly believes that erectile function can be well preserved by using endo-wrist technology, excellent visualization and good cases selection.

Conclusion

Robotic Assisted Laparoscopic Radical Prostatectomy has been widely accepted as one of the treatment option in early prostate cancer patients. It is now well established in Thailand as the patients undergone the procedure can gain benefit of a good cancer control, which aims for cure the disease. Furthermore, quality of life has not been much interfered after the procedure. Therefore, the procedure should be offered to the young patients, who consider excellent cancer elimination with good quality of life.

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