



**ORIGINAL RESEARCH PAPER**

**Urology**

**EXTRAPERITONEAL APPROACH FOR ROBOT-ASSISTED RADICAL PROSTATECTOMY FOR LOCALIZED PROSTATE CANCER OUR EXPERIENCE**

**KEY WORDS:**

<b>Dr Sharath D.V</b>	Senior Resident, Institute of Nephro-Urology Yenepoya medical college Derlakatte Mangalore
<b>Dr Nischith Dsouza</b>	Professor, Institute of Nephro-Urology Yenepoya medical college Derlakatte Mangalore
<b>Dr Mujeeburahiman</b>	HOD and Professor, Institute of Nephro-Urology Yenepoya medical college Derlakatte Mangalore
<b>Dr Altaf Khan</b>	Professor, Institute of Nephro-Urology Yenepoya medical college Derlakatte Mangalore

**ABSTRACT**

**Objectives:** To see clinical effects of extraperitoneal (Ep) robot-assisted radical prostatectomy (RARP) in the treatment of localized prostate cancer **Methods:** A prospective, non-randomized study was conducted . The demographics and operative outcomes of 9 patients with prostate cancer undergoing robot-assisted laparoscopic radical prostatectomy(RALP) from January 2021 TO March 2022 at our center were included. following aspects: operation time, intraoperative blood loss, postoperative catheterization time, length of bed confinement, perioperative complications, positive surgical margins, bowel-related complications, postoperative anastomotic leakage, and postoperative urinary continence were accessed **Results:** The mean age 64.78 years in our study with BMI of 21.58 kg/m2, mean operating time was 193.33min and with intraoperative blood loss 173.33 ml , post operative bed confinement of 26.11 hr , 1 patient had positive surgical margin, ileus was not seen any patient post operatively , 1patient had post operative anastomotic leak, post operatively catheter was placed for 4week, perioperatively grade 1 clavin dindo complication was seen , and post operative continence was achieved at 6month **Conclusions:** Ep-RARP has the advantages of shorter operation time, shorter length of bed confinement and lower rate of bowel-related complications, and therefore may be a better option for the treatment of localized prostate cancer. However, more multi-centered randomized controlled clinical trials are needed for further evaluation of these approach

**INTRODUCTION:**

Since the time of the first robot-assisted laparoscopic radical prostatectomy (RALP) performed by Binder in 2000, robotic surgery has grown leaps and bounds.[1-3] The transperitoneal route remains the most accepted approach associated with minimal perioperative morbidity and good long-term functional and oncological outcomes.[4-6] There still remain definite concerns arising from violation of the peritoneal cavity and its allied risks EP was first described by Gettman et al. [8] in 2003. advantages of EP with similar oncological results, shorter or equal surgical time and fewer complications, by avoiding the abdominal cavity, we are sharing our experience in EP- RALP in our institution

**MATERIAL AND METHOD :**

A prospective, non-randomized study was conducted . The demographics and operative outcomes of 9 patients with prostate cancer undergoing robot-assisted laparoscopic radical prostatectomy(RALP) from January 2021 TO March 2022 at our center were included. following aspects: operation time, intraoperative blood loss, postoperative catheterization time, length of bed confinement, perioperative complications, positive surgical margins, bowel-related complications, postoperative anastomotic leakage, and postoperative urinary continence were accessed.

**Inclusion criteria :**

Patient diagnosed with localised prostate cancer ,

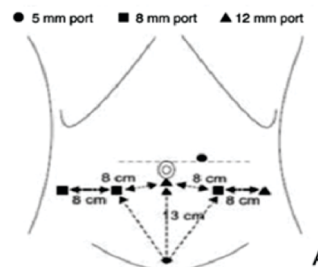
**Exclusion criteria :**

Metastatic disease, Stricture urethra, Neurogenic bladder, Poor performance status, Multiple previous h/o surgery, Coagulopathy, Abdominal wall infection

All surgical procedures were performed by the same surgical team. For EP-RARP, the patients were placed supine with a 15° to 20° Trendelenburg incline. An infraumbilical incision was

used to expose the anterior rectus sheath. A space behind the posterior sheath of the fascia was then developed with digital dissection for potential balloon placement. At times, it was incised to allow for easier development of the EP space. The EP dissection balloon was used to create the initial space. A 12-mm camera was placed through this trocar site using the Hassan technique. Next, the two 8-mm robotic ports were placed under vision about 2 cm below the level of the camera port and lateral to the rectus muscle on either side, equidistant from the camera port in an approximately right-angle configuration. Two additional ports (5 mm and 12 mm) were placed for the assistant on one side. Placement of these ports might require further mobilization of the peritoneum with blunt dissection under laparoscopic vision through the robotic ports. Prostatectomy was begun with dissection of the endopelvic fascia. The remainder of the procedure was similar to the TP approach, except for the lack of a need to mobilize the bladder. Bladder neck dissection was performed through the anterior approach quite easily with this port placement, because the ports were lower than in traditional TP port placement. Pelvic lymphadenectomy was easily accomplished and mimicked the open radical retropubic approach. A closed suction drain was placed.

**EP-RALP**



**Statistical Analysis:**

SPSS 19.0 software was used for all data analyses. Results are presented as mean, standard deviation.

**RESULTS:**

The mean age 64.78 years in our study with BMI of 21.58 kg/m<sup>2</sup>, mean operating time was 193.33min and with intraoperative blood loss 173.33 ml, post operative bed confinement of 26.11 hr, 1 patient had positive surgical margin, ileus was not seen any patient post operatively, 1 patient had post operative anastomotic leak, post operatively catheter was placed for 4 week, perioperatively grade I clavin dindo complication was seen, and post operative continence was achieved at 6 month

Group	N	MEAN	STD DEVIATION
AGE	9	64.78	6.22
BMI	9	21.58	1.74
OPERATING TIME	9	193.33	15.81
INTRA OP BLOOD LOSS	9	173.33	18.71
LENGTH OF BED CONFINEMENT	9	26.11	2.58

Extraperitoneal		Count	Column N %
Positive surgical margins	NEGATIVE	8	88.9%
	POSITIVE	1	11.1%
Bowel-related complications	ILEUS	0	0.0%
	NIL	9	100.0%
Postoperative anastomotic leakage	NO	8	88.9%
	YES	1	11.1%
T	T2	2	22.2%
	T2a	3	33.3%
	T3a	3	33.3%
	T3b	1	11.1%
N	NO	0	0.0%
	N1	0	0.0%
	NX	9	100.0%
M	M0	9	100.0%
Pathological TNM	T2aN0M0	3	33.3%
	T2N0M0	2	22.2%
	T3aN0M0	1	11.10%
	T3bN0M0	2	22.2%
	T3bN1M0	1	11.1%
	SEX	M	9
postoperative catheterization time	4WEEK	9	100.0%
Perioperative complications	GRADE 1	9	100.0%
Postoperative urinary continence	NO	9	100.0%
Continence at 6 months.	YES	9	100.0%

**DISCUSSION:**

Robotic surgery has now become firmly ingrained in the armamentarium of urology since its inception. RALP has surpassed the litmus test and is now an established minimally invasive treatment for localized carcinoma prostate achieving trifecta outcomes. [2, 8-9] The challenge of this new procedure has always been to deliver results similar to those of the standard open retro pubic approach while decreasing the associated morbidity. The extraperitoneal approach has also been described with equivalent efficacy to the transperitoneal approach. [10, 11-12]

After performing more than 100 transperitoneal RALPs, we switched over to extraperitoneal RALP using a five-port technique. Our operative time of 193 min, In our series, we did

not find any abdominal complications like ileus and obstruction, and the overall morbidity was low and similar to that reported in the literature. [13] The mean blood loss in our series was 173.33 mL. Based on this result, we believe that the early control of DVC, precise ligation of vessels and tamponade effect created by pneumoperitoneum contributed to the diminished blood loss, post operative bed confinement was 26.11hr, early mobilization was possible due to less bowel complication, post operative anastomotic leak was seen in 1 patient was managed conservatively on pod 3 there was no further leak was seen, positive surgical margin was in 1 patient and he currently on regular follow up, continence was seen at 6 month post catheter removal.

**CONCLUSIONS:**

Ep-RARP has the advantages: Shorter operating time (Bladder mobilization required in TP), Early mobilization from bed, lower rate of bowel-related complications over TP-RARP, No need of steep Trendelenburg position, Better for cardiac patients, Less anaesthetic complication, Therefore Ep-RARP may be a better option for the treatment of localized prostate cancer. However, more multi-centered randomized controlled clinical trials are needed for further evaluation of these approach.

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