

# Extra-Peritoneal Versus Trans-Peritoneal Robot Assisted Laparoscopic Radical Prostatectomy – Point of technique and Perioperative outcomes

*N Ragavan, Meera Ragavan, Malarvizhi Ramesh*

Apollo Hospitals, Chennai

## Background

Robot assisted laparoscopic prostatectomy has traditionally been done using trans-peritoneal (TP RRP) approach. However this requires patient on steep trendelenburg position. This has the risk of post operative confusion status, corneal edema, cerebral edema, slight delay in bowel recovery and small risk of small bowel injury. In addition, there are risks of high ventilatory pressures during surgery as well as a small risk of DVT and compartment syndrome. Extra-peritoneal (EP RRP) approach circumvents the above issues.

## Material Method

The extra-peritoneal approach is achieved using the spacer balloon after creating a sub-umbilical incision. Total of 5 ports (one 12mm for camera one 10mm for assistant and three 8mm for robot arm) is used for this approach. The radical prostatectomy itself is performed using Leizpig-Bradford technique (described before – USICON2014). This includes initial paraurethral bladder neck dissection, anterior bladder neck exposure, securing catheter with a stitch, posterior bladder neck dissection, excision of the vasa & vesicle, neurovascular bundle excision, DVC ligation, apical dissection, excision of the prostate and final urethro-vesical anastomosis.

## Results

Over a 3 year period , 48 patients underwent robot assisted laparoscopic prostatectomy by a single surgeon ( NR) using both techniques ( EPRRP = 25 and TPRRP =23). The comparison of perioperative outcomes are shown in a tabular column as below

Parameters	EP RRP	TP RRP
Median operative time ( Min)	220	240
Median Dock time ( min)	180	220
Age ( years)	64.7	63.9
Lymph node dissection	21	15
Blood transfusion	1	1
Ventilator issues	0	1
Diet and ambulation ( Post op day)	0	0
Bowel open ( Post op Day) (Mean)	1.7	2.2
Peak airway pressure ( mean)	34	40
ET CO2	40	36
Airway edema	Nil	Nil
Resp acidosis	Nil	Nil

Sub cut emphysema	Nil	Nil
Post operative restlessness	Nil	2
Subconjunctival edema	Nil	18

## **Conclusion**

Extra-peritoneal robot assisted laparoscopic radical prostatectomy is a feasible technique with its advantage of less Trendelenburg position, shorter dock time, early and faster recovery of the patients and bowels and avoidance of small bowel injury.