

Is robot-assisted radical nephroureterectomy with bladder cuff excision superior to pure laparoscopic approach in the treatment of upper urinary tract urothelial carcinoma?

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Introduction & Objectives: Laparoscopic nephroureterectomy has been introduced to the treatment of upper urinary tract urothelial carcinoma for a long time, which could provide better cosmesis and comparable oncological outcomes to its open counterpart. Robotic approach was applied to such clinical scenario recently. However, there are few reports comparing laparoscopic and robotic approaches. We presented our experiences of robot-assisted (RANU) versus pure laparoscopic (LNU) radical nephroureterectomy with bladder cuff excision.

Materials & Methods: A retrospective review was performed for patients who underwent LNU or RANU from March 2012 to October 2017. Patients were matched for age (± 3 years) and gender between the two treatment arm. The perioperative and oncological outcomes were compared.

Results: A matched cohort of 174 patients who underwent RANU (n = 87) or LNU (n = 87) were compared. Each group consisted of 47 men and 40 women. There were no significant differences between the 2 groups with respect to BMI (p = 0.63) and tumor location. The mean follow-up duration was 24.8 months in RANU group and 24.5 months in LNU group. No significant differences were noted regarding the total operative and nephroureterectomy time (335.8 vs 318.3 minutes, p = 0.15; 137.8 vs 147.4 minutes, p = 0.28), median post-operative hospital stay (8 vs 9 days, p = 0.50), median catheter time (5 vs 6 days, p = 0.13), positive surgical margin rate (4.6% vs 8%, p = 0.35) and peri-operative complications. However, the median estimated blood loss (EBL) was higher in the LNU cohort (150 vs 30 mL, p < 0.001). There were no significant differences with respect to bladder recurrence, distant metastasis, cancer-specific death, and overall survival.

Perioperative results between RANU and LNU

	RANU	LNU	p
Total operative time (min)	335.8 (170 - 655)	318.3 (170-590)	0.145
Nephroureterectomy time (min)	137.8 (45 - 325)	147.4 (70-300)	0.28
Median EBL (ml)	30 (2-2500)	150 (30-1880)	<0.001
Median post-operative hospital stay (days)	8	9	0.496
Median catheter time (days)	5 (3 - 16)	6 (2-18)	0.133
Bladder cuff excision approach (%)			
Gibson	0(0)	64 (73.6)	

Midline	0(0)	12 (13.8)	
Pure laparoscopic BCE	100(100)	11 (12.6)	
Intraoperative complication (%)	7 (8)	5 (5.7)	0.55
Postoperative complication (%)	11 (12.6)	9 (10.3)	0.635
Clavien-Dindo score			0.285
1	10	3	
2	7	9	
3-5	1	2	
Median Clavien score	1	2	0.305

Conclusions: LNU and RANU had similar perioperative and oncological outcomes in our experiences. However, higher EBL was observed in the LNU cohort.