Hong Kong Urological Association
The 27th Annual Scientific Meeting
Kerry Hotel, 38 Hung Luen Road,
Hung Hom Bay, Kowloon, Hong Kong
6th November 2022

Abstract No.:

Comparison of peri-operative outcome of retroperitoneoscopic radical nephrectomy versus transperitoneal laparoscopic radical nephrectomy for malignant renal tumor in a tertiary center

MSY Mak, HL Wong, CF Tsang , TCT Lai, BSH Ho, ATL Ng, JHL Tsu
Division of Urology, Department of Surgery, Queen Mary Hospital

Introduction

Retroperitoneoscopic radical nephrectomy (RRN) has been introduced as an alternative to transperitoneal laparoscopic radical nephrectomy (TLRN) in management of malignant renal tumors. It allowed faster renal hilar control and did not require bowel mobilization. It has been shown to be beneficial in patients with previous abdominal surgery or patient on continuous ambulatory peritoneal dialysis.[1]

This study aim to review the peri-operative outcome of retroperitoneoscopic radical nephrectomy compared to transperitoneal laparoscopic radical nephrectomy in management of malignant renal tumors.

Fig 1. Port site insertion for Left retroperitoneoscopic nephrectomy

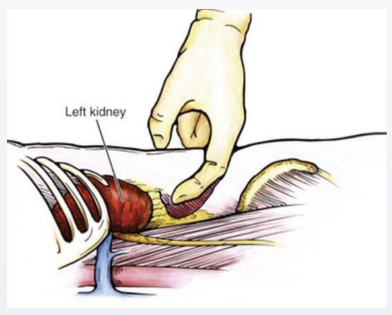

Fig 2. Generation of retroperitoneal space with finger blunt dissection[2]

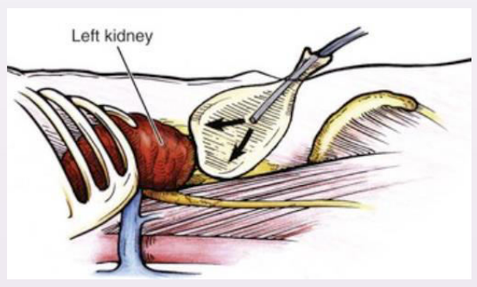

Fig 3. Generation of retroperitoneal space with Gaur's balloon [2]

Methods

We retrospectively evaluated all patients treated with RRN or TLRN for malignant renal tumor between 01/2013 to 06/2022. Patients with suspicion of nodal dissemination (cN+) or systemic metastasis (cM+) were excluded from the analysis.

The following parameters were retrieved from the electronic patient record. Patient's demographics, operative characteristics including operative time, estimated blood loss, open conversion, perioperative complications, duration of hospital stay, blood loss and pathological characteristics were recorded.

Results

222 patients were reviewed. 154 patients (69.4%) TLRN group, and 68 (30.6%) patients in RRN group. The operative time was 167.9 minutes in RRN group versus 201 minutes in LRN group. (p=0.002). In subgroup analysis on T1 tumors, it showed no statistically significant difference in operative time, blood loss, conversion to open, complication rate and duration of hospital stay between TLRN & RRN group.

N=222	Transperitoneal laparoscopic radical nephrectomy (n=154)	Retroperitoneoscopic radical nephrectomy (n =68)	*p*
Mean age	63	65	
Female	53 (34%)	27 (40%)	
ASA ≥ 3	54 (35%)	61 (89%)	< 0.001
Mean tumor size (mm)	61.92	29.08	<0.001

Table 1. Basic characteristic of TLRN group & RRN group

N=222	Transperitoneal laparoscopic radical nephrectomy (n=154)	Retroperitoneoscopic radical nephrectomy (n =68)	*p*
Mean operative time (minutes)	201	168	0.002
Blood loss (ml)	208	240	
Conversion to open	1 Dense adhesion & slow progress	1 Bleeding from segmental branch of renal artery	
Clavien dindo 3 or above complications	1 Pneumoperitoneum	0	
Mean length of hospital stay	6.2	5.9	

Table 2. Intraoperative characteristic of TLRN group & RRN group

N=119	Transperitoneal laparoscopic radical nephrectomy (n=73)	Retroperitoneoscopic radical nephrectomy (n =46)	*p*
Mean operative time (minutes)	191	170	0.106
Blood loss (ml)	174	283	
Conversion to open	0	0	
Clavien dindo 3 or above complications	0	0	
Mean length of stay	5.5	5.8	

Table 3. Subgroup analysis stage 1 tumors between TLRN vs RRN group

Conclusion

Retroperitoneoscopic radical nephrectomy is safe and feasible for treatment of malignant renal tumors. It demonstrated a similar perioperative complication profile with transperitoneal laparoscopic radical nephrectomy and provided surgeons another armament when treating renal tumors

References

1. Nambirajan, T. et al. (2004). Prospective, randomized controlled study: transperitoneal laparoscopic versus retroperitoneoscopic radical nephrectomy. Urology, 64(5), 919–924.
2. Gill, I. S., & Rassweiler, J. J. (1999). Retroperitoneoscopic Renal surgery: Our approach. Urology, 54(4), 734-738.