



L'intérêt de l'abord coelioscopique dans la néphrourectomie totale pour TVES

M. HAFFAF, S. KERROUMI, A. BAZZI, S. TALEB, C. OUANEZAR, A.D.
LANSARI, H. MERROUCHE, M. J. YOUSFI

Service d'urologie EHU Oran

Introduction :

- La tumeur de la voie excrétrice supérieure est une tumeur rare
- La chirurgie constitue le traitement de référence des formes localisées à haut risque (NUT+)
- La voie d'abord laparoscopique s'impose de plus en plus dans la chirurgie carcinologique dans notre service
- La morbidité péri-opératoire, les taux de complications, et la sécurité carcinologique en font une technique séduisante.

Objectif :

- Revue de la littérature concernant l'apport de la laparoscopie dans la NUT réalisée pour tumeur de la voie excrétrice supérieure
- Décrire les différentes techniques de néphrourétérectomie laparoscopique
- Décrire notre technique de NUT laparoscopique

Ce que disent les Recos :

7.1.6 *Summary of evidence and guidelines for the management of high-risk non-metastatic UTUC*

Summary of evidence	LE
Radical nephroureterectomy is the standard treatment for high-risk UTUC, regardless of tumour location.	2a
Open, laparoscopic and robotic approaches have similar oncological outcomes for organ-confined UTUC.	2a
Failure to completely remove the bladder cuff increases the risk of bladder cancer recurrence.	3
Lymphadenectomy improves survival in muscle-invasive UTUC.	3
Post-operative chemotherapy improves disease-free survival.	1b
Single post-operative intravesical instillation of chemotherapy lowers the bladder cancer recurrence rate.	1

2022 EAU guidelines on Upper Urinary Tract Urothelial Cell Carcinoma

Ce que disent les Recos :

Recommendations	Strength rating
Perform radical nephroureterectomy (RNU) in patients with high-risk non-metastatic upper tract urothelial carcinoma (UTUC).	Strong
Perform open RNU in non-organ-confined UTUC.	Weak
Perform a template-based lymphadenectomy in patients with high-risk non-metastatic UTUC.	Strong
Offer post-operative systemic platinum-based chemotherapy to patients with high-risk non-metastatic UTUC.	Strong
Deliver a post-operative bladder instillation of chemotherapy to lower the intravesical recurrence rate.	Strong

2022 EAU guidelines on Upper Urinary Tract Urothelial Cell Carcinoma

NUT = NTE laparoscopique ?

ORIGINAL RESEARCH

Laparoscopic nephroureterectomy is associated with higher risk of adverse events compared to laparoscopic radical nephrectomy

Ravin Bastiampillai, MD;¹ Luke T. Lavallée, MD;^{1,2} Sonya Cnossen, MSc;² Kelsey Witiuk, MSc;² Ranjeeta Mallick, PhD;² Dean Fergusson, PhD;² David Schramm, MD;³ Christopher Morash, MD;¹ Ilias Cagiannos, MD;¹ Rodney H. Breau, MD^{1,2}

¹Division of Urology, Department of Surgery, The Ottawa Hospital, University of Ottawa, Ottawa, ON, Canada; ²Ottawa Hospital Research Institute, Department of Clinical Epidemiology, Ottawa, ON, Canada;

³Division of Otolaryngology, Department of Surgery, The Ottawa Hospital, University of Ottawa, Ottawa, ON, Canada

During the study period, between 2006 and 2012 : 4904 patients included :

- 4159 (84.8%) received a LRN
- 745 (15.2%) received a LNU

Bastiampillai R, Lavallée LT, Cnossen S, et al. Laparoscopic nephroureterectomy is associated with higher risk of adverse events compared to laparoscopic radical nephrectomy. *Can Urol Assoc J.* 2016;10(3-4):126-131. doi:10.5489/cuaj.3362

NUT = NTE laparoscopique ?

Variable	LNU n (%)	LRN n (%)	Relative risk* (95% CI)	p value
Hematologic complications				
Blood transfusion	67 (9.0)	251 (6.0)	1.49 (1.15-1.92)	<0.01
DVT/thrombophlebitis	10 (1.3)	16 (0.4)	3.49 (1.59-7.66)	<0.01
Pulmonary embolism	2 (0.3)	10 (0.2)	1.12 (0.25-5.09)	0.89
Cerebrovascular accident/stroke with neurological deficit	6 (0.8)	5 (0.1)	6.70 (2.05-21.90)	<0.01
Infectious complications				
Urinary tract infection	34 (4.6)	63 (1.5)	3.01 (2.00-4.54)	<0.01
Wound infection	10 (1.3)	75 (1.8)	0.74 (0.39-1.43)	0.38
Progressive renal failure	19 (2.6)	26 (0.6)	4.08 (2.27-7.33)	<0.01
Cardiac and other complications				
Myocardial infarction	9 (1.2)	18 (0.4)	2.79 (1.26-6.19)	0.01
Wound dehiscence	4 (0.5)	15 (0.4)	1.49 (0.50-4.47)	0.48
Cardiac arrest requiring CPR	4 (0.5)	10 (0.2)	2.23 (0.70-7.10)	0.17
Any complication	154 (20.7)	497 (12.0)	1.73 (1.47-2.04)	<0.01
Length of total hospital stay	Median: 4 IQR 3-6	Median: 3 IQR 2-4		<0.01

Mais !

- Pas de données liées au stade
- Pas de données concernant la gestion de la collerette vésicale

Bastiampillai R, Lavallée LT, Cnossen S, et al. Laparoscopic nephroureterectomy is associated with higher risk of adverse events compared to laparoscopic radical nephrectomy. *Can Urol Assoc J.* 2016;10(3-4):126-131. doi:10.5489/cuaj.3362

Surgical technique and outcomes

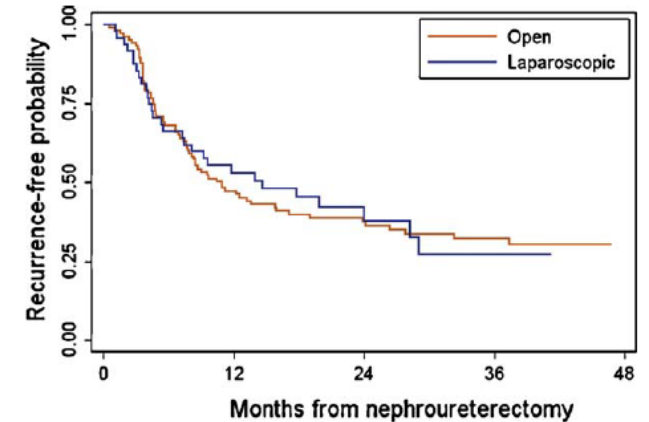


Platinum Priority – Urothelial Cancer
Editorial by Amnon Zisman on pp. 652–653 of this issue

Comparison Between Laparoscopic and Open Radical Nephroureterectomy in a Contemporary Group of Patients: Are Recurrence and Disease-Specific Survival Associated with Surgical Technique?

Ricardo L. Favaretto^a, Shahrokh F. Shariat^a, Daher C. Chade^a, Guilherme Godoy^a,
Matthew Kaag^a, Angel M. Cronin^b, Bernard H. Bochner^a, Jonathan Coleman^a, Guido Dalbagni^{a,*}

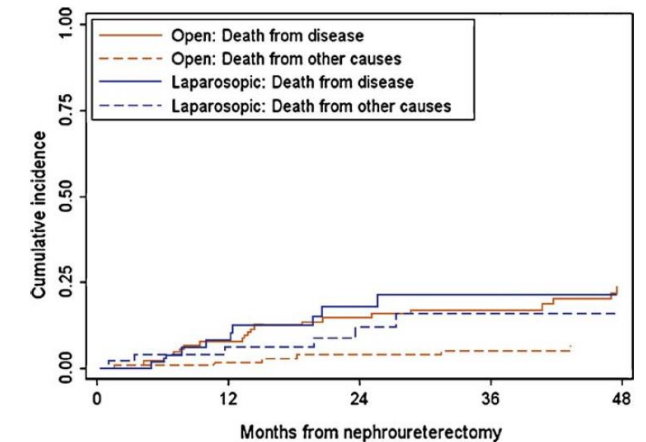
- 324 consecutive patients treated with RN at Memorial Sloan-Kettering Cancer Center (MSKCC) between 1995 and 2008.
- **Laparoscopic RNU not inferior to OPEN**



Number at risk

Months from nephroureterectomy	0	12	24	36	48
Open	109	46	29	20	14
Laparoscopic	53	22	10	2	1

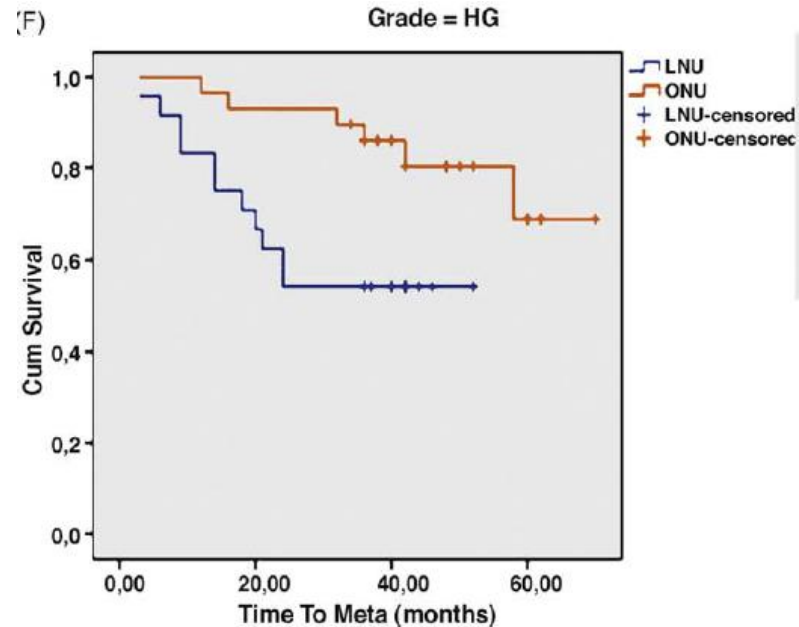
Fig. 1 – Kaplan-Meier estimates of recurrence-free probabilities following nephroureterectomy, stratified by surgical approach.



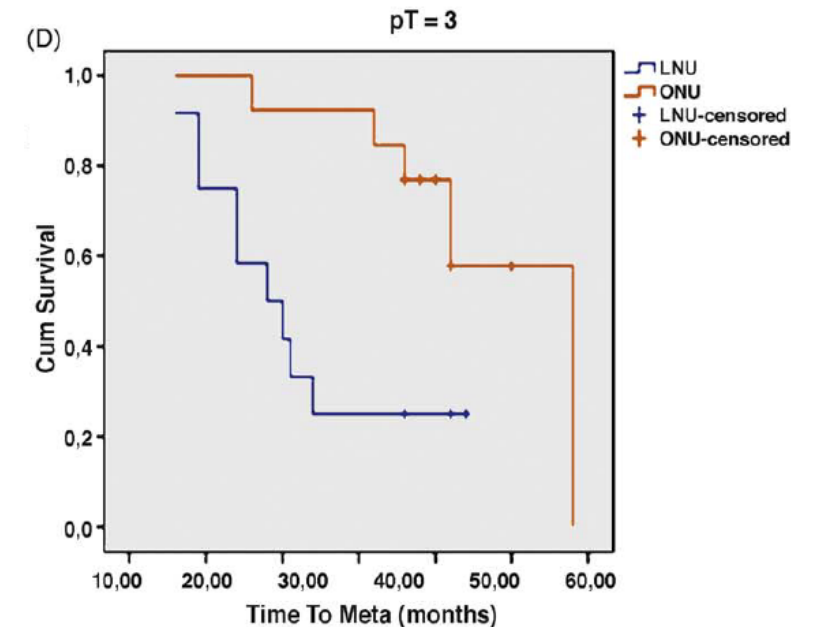
Favaretto, Ricardo L et al. "Comparison between laparoscopic and open radical nephroureterectomy in a contemporary group of patients: are recurrence and disease-specific survival associated with surgical technique?" *European urology* vol. 58,5 (2010): 645-51. doi:10.1016/j.eururo.2010.08.005

Laparoscopic versus open nephroureterectomy : perioperative and oncologic outcomes from a randomised prospective study

- 80 patients randomized
- 41 mo follow up
- Comparable oncologic outcomes in patients with organ-confined disease.
- Effectiveness in patients with advanced stage diseases remains to be proven



P= 0,037



P= 0,004

Simone, Giuseppe et al. "Laparoscopic versus open nephroureterectomy: perioperative and oncologic outcomes from a randomised prospective study." *European urology* vol. 56,3 (2009): 520-6. doi:10.1016/j.eururo.2009.06.013

Laparoscopic versus open nephroureterectomy : An European Association of Urology Guidelines Systematic Review

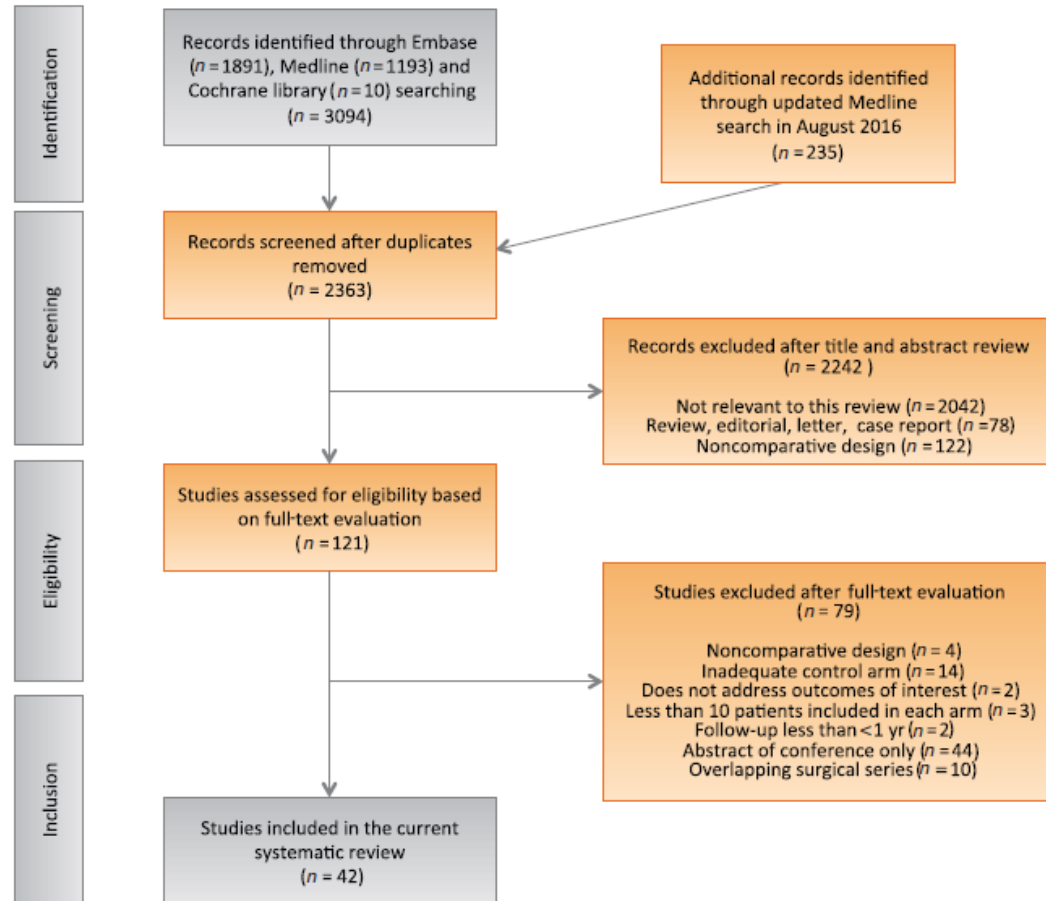


Fig. 1 – A PRISMA flowchart describing the study selection process. PRISMA = Preferred Reporting Items for Systematic reviews and Meta-Analysis.

42 studies included

Oncological outcomes of laparoscopic RNU may be poorer than those of open

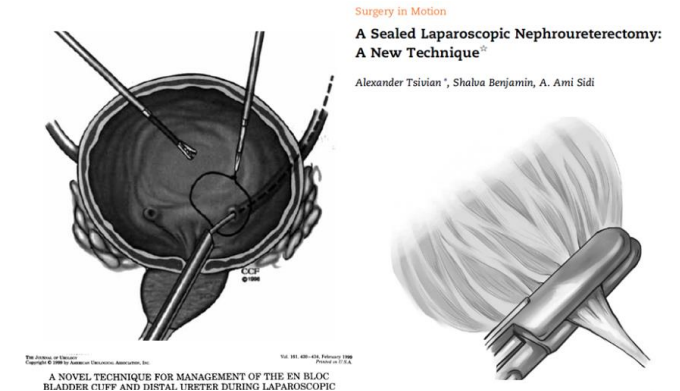
- When the bladder cuff is excised laparoscopically
- In patients with locally advanced high-risk UTUC (pT3/pT4 and/or high grade).

Peyronnet B, et al. Oncological Outcomes of Laparoscopic Nephroureterectomy Versus Open Radical Nephroureterectomy for Upper Tract Urothelial Carcinoma: An European Association of Urology Guidelines Systematic Review. Eur Urol Focus (2017), <https://doi.org/10.1016/j.euf.2017.10.003>

Management of the Distal Ureter

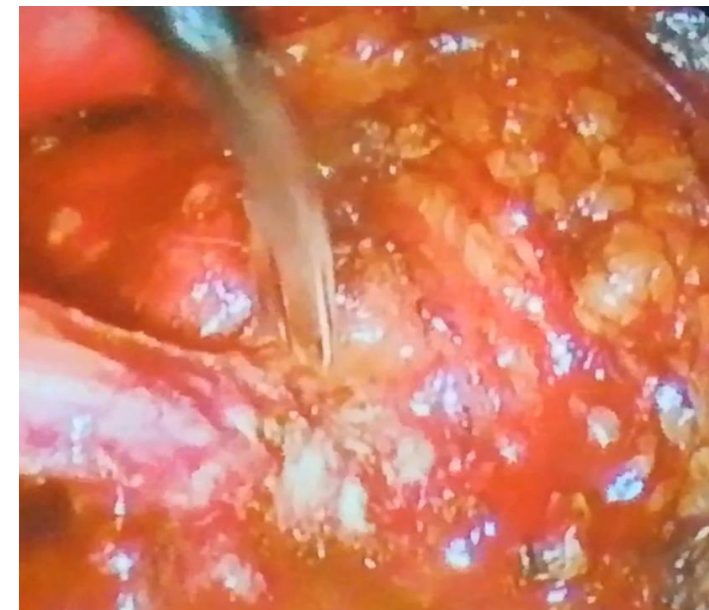
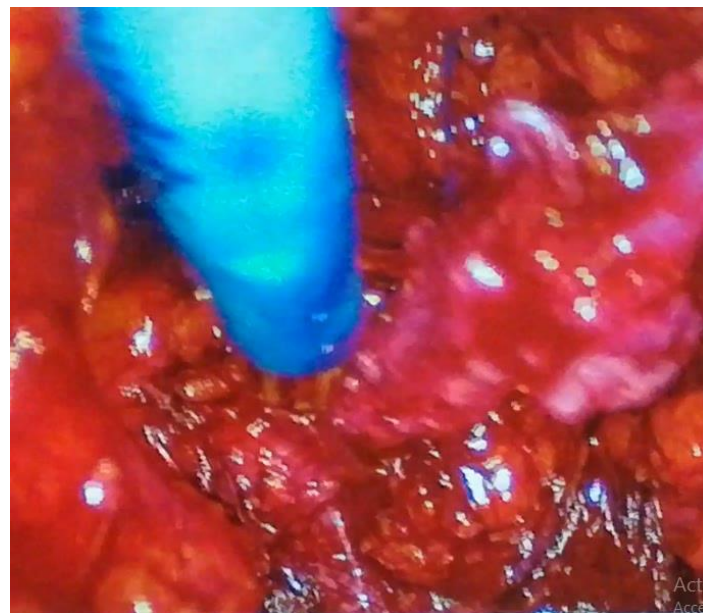
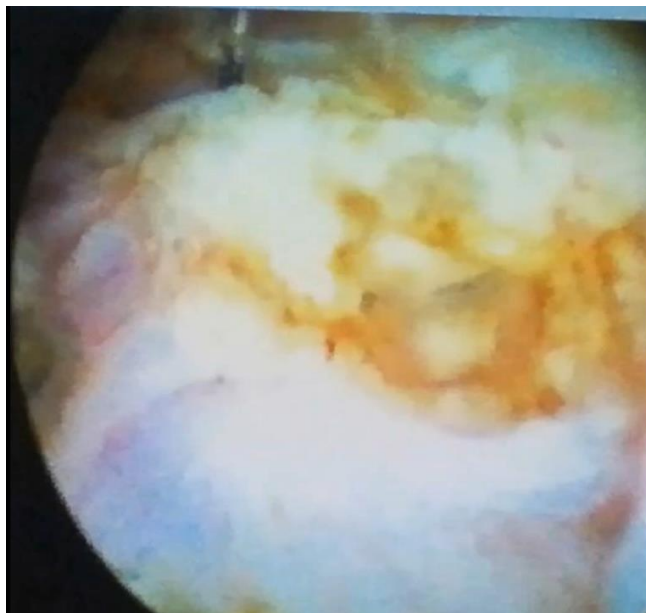
Several techniques have been considered to simplify distal ureter resection :

- Pluck technique
- Stripping
- Transurethral resection of the intramural ureter
- Open removal
- None of these techniques has convincingly been shown to be equal to complete bladder cuff excision



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Management of the Distal Ureter



Management of the Distal Ureter

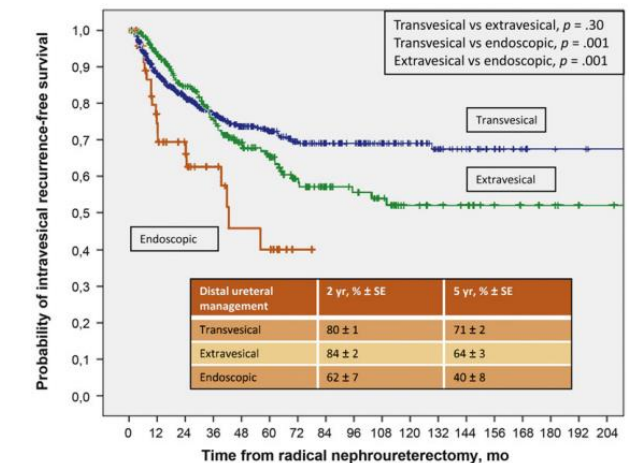
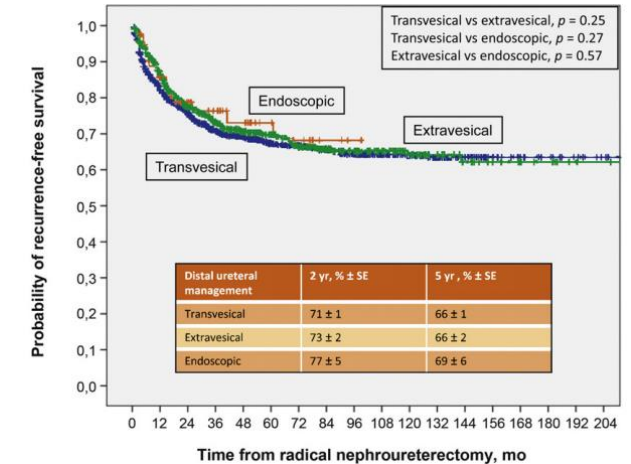
available at www.sciencedirect.com
journal homepage: www.europeanurology.com



Urothelial Cancer

Impact of Distal Ureter Management on Oncologic Outcomes Following Radical Nephroureterectomy for Upper Tract Urothelial Carcinoma

- 2681 patients, médiane de suivi = 57 mois
- Pas de différence en survie
- **Plus de récurrence vésicale dans le groupe « endoscopique »**



Xylinas, Evangelos et al. "Impact of distal ureter management on oncologic outcomes following radical nephroureterectomy for upper tract urothelial carcinoma." *European urology* vol. 65,1 (2014): 210-7. doi:10.1016/j.eururo.2012.04.052

The impact of method of distal ureter management during radical nephroureterectomy on tumour recurrence

- 820 patients 49% transvesical approach
 38% extravesical approach
 12% endoscopic approach
- Median follow-up: 25 months



- 5 year recurrence-free rates:

Transvesical: 46.3%
Extravesical: 35.6%
Endoscopic: 30.1%

Endoscopic and extravesical approach associated with higher recurrence rates



Trans Versus Retro peritoneal approach

Surg Endosc
DOI 10.1007/s00464-016-4922-x



Transperitoneal versus retroperitoneal laparoscopic nephroureterectomy in the management of upper urinary tract urothelial carcinoma: a matched-pair comparison based on perioperative outcomes

Pas de différence en matière de :

- Durée opératoire
- Saignement
- Taux de complications

En rétro-péritonéal :

- Reprise rapide du transit
- hospitalisation plus courte

Metastatic dissemination ?

Author	Surgery	Stage	Retrieval bag	Metastases location	Time to metastasis (mo)	Comments
Ahmed et al. [23]	CT	pT3	No	Widespread	8	
Barrett et al. [24]	CT	pT1	No	Widespread	NL	
Otani et al. [25]	CT	pT3	Yes	Trocar	3	Bag torn; preoperative diagnosis of TCC not known
Ong et al. [26]	CR	pT1	Yes	Trocar	12	Stent perforation in proximal ureter noted at time of LNU
Chueh et al. [27]	HAT	pT2	NL	Trocar	8	Bilateral LNU and TURBT performed in renal transplant patient
Micali et al. [28]	CT	pT3	Yes	NL	3	
Micali et al. [28]	CR	pT3	Yes	NL	15	
Micali et al. [28]	HAT	pT3	Yes	NL	3	

- Souvent après indication de laparoscopie pour tumeur rénale (TVES sur pièce)
- Peut être évitée par les précautions de manipulation

Matsui et al. [29]	CR	pT3	No	Trocar	6	known Squamous cell carcinoma
Naderi et al. [30]	CT	pT2	No	Trocar, subcostal wound	3	Required conversion to open surgery secondary to renal vein bleeding
Manabe et al. [20]	CR	NL	NL	Widespread	NL	Urine extravasation secondary to urinary tract obstruction noted preop
Schatteman et al. [9]	CT	pT4	No	Widespread	5	Preoperative diagnosis of TCC not known
Schatteman et al. [9]	CT	pT3	No	Widespread	8	Preoperative diagnosis of TCC not known
Schatteman et al. [9]	CT	pT1	Yes	Widespread	11	

Viprakasit DP, Macejko AM, Nadler RB. Laparoscopic nephroureterectomy and management of the distal ureter: a review of current techniques and outcomes. Adv Urol. 2009;2009:721371. doi:10.1155/2009/721371

Risk of tumour spillage ?

- Avoid entering the urinary tract;
- Avoid direct contact between instruments and the tumour;
- Perform the procedure in a closed system.
- Avoid morcellation of the tumour and use an endobag for tumour extraction;
- The kidney and ureter must be removed en bloc with the bladder cuff;
- Invasive or large (T3/T4 and/or N+/M+) tumours are contraindications for minimal-invasive RNU as the outcome is worse compared to an open approach

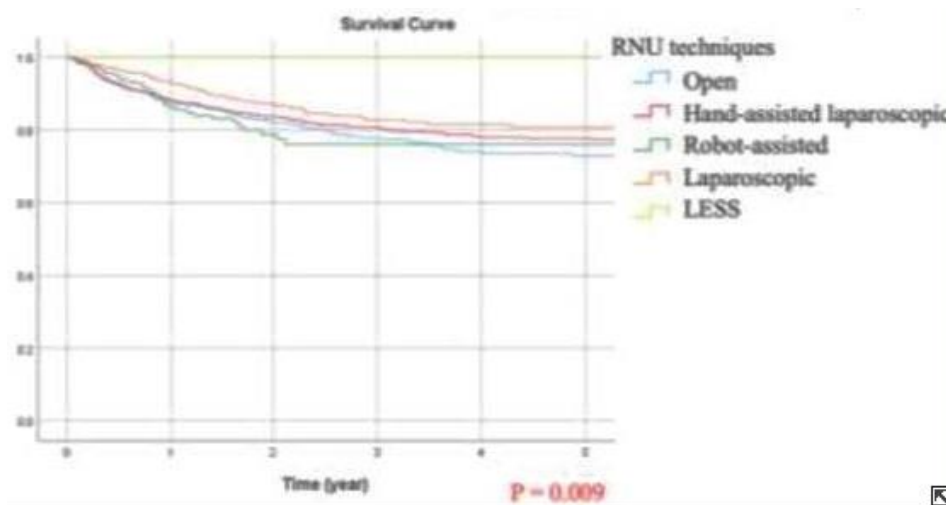
Factors Predicting Oncological Outcomes of Radical Nephroureterectomy for Upper Tract Urothelial Carcinoma in Taiwan

- A total of 3,333 patients with UTUC from August 1988 to April 2021 inclusive were enrolled.
- 1808 RNU included
- Minimally invasive procedures accounted for 78.8% of all surgeries :
- 768 hand-assisted laparoscopic (42.5%)
- 494 laparoscopic (27.3%)

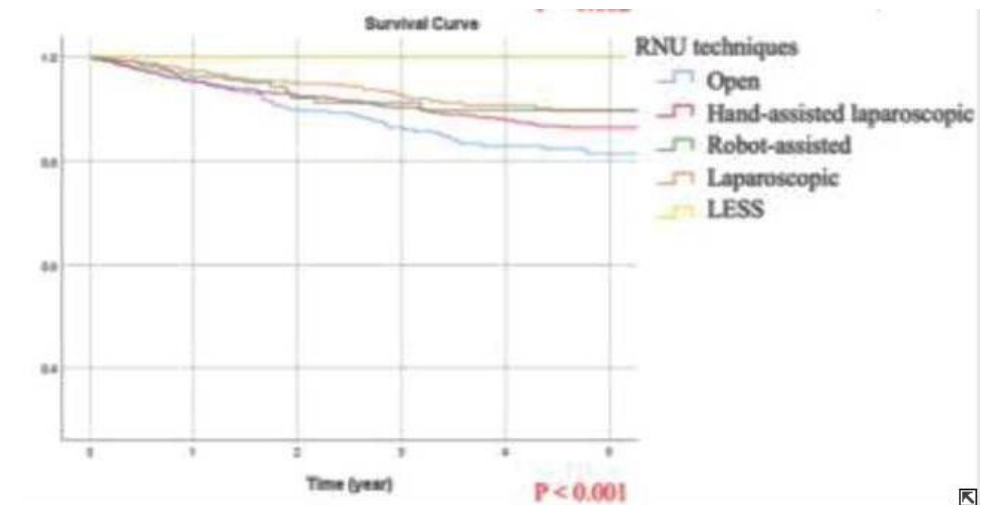
Comparative univariate and multivariate analyses of disease-free survival (DFS) and intravesical recurrence-free survival (IVRFS) in patients with UTUC.

	DFS		Multivariate		IVRFS		Multivariate
	Univariate		HR (95% CI)	p	Univariate	p	
RNU techniques							
Reference: open							
Hand-assisted laparoscopic	0.76 (0.61–0.96)	0.020*	0.98 (0.77–1.25)	0.875	1.15 (0.90–1.48)	0.258	
Robot-assisted	0.80 (0.55–1.17)	0.249	1.01 (0.68–1.50)	0.953	1.11 (0.75–1.64)	0.611	
Laparoscopic	0.59 (0.45–0.78)	<0.001**	0.73 (0.55–0.96)	0.027*	1.17 (0.89–1.54)	0.250	
LESS	0.34 (0.05–2.46)	0.286	0.20 (0.03–1.46)	0.111	0.83 (0.21–3.39)	0.800	

Factors Predicting Oncological Outcomes of Radical Nephroureterectomy for Upper Tract Urothelial Carcinoma in Taiwan



Kaplan-Meier curves of disease-free survival (DFS)



Kaplan-Meier curves of cancer-specific survival (CSS)

Laparoscopic RNU might provide better oncological control

NUT laparoscopique dans notre service :

Installation du patient :

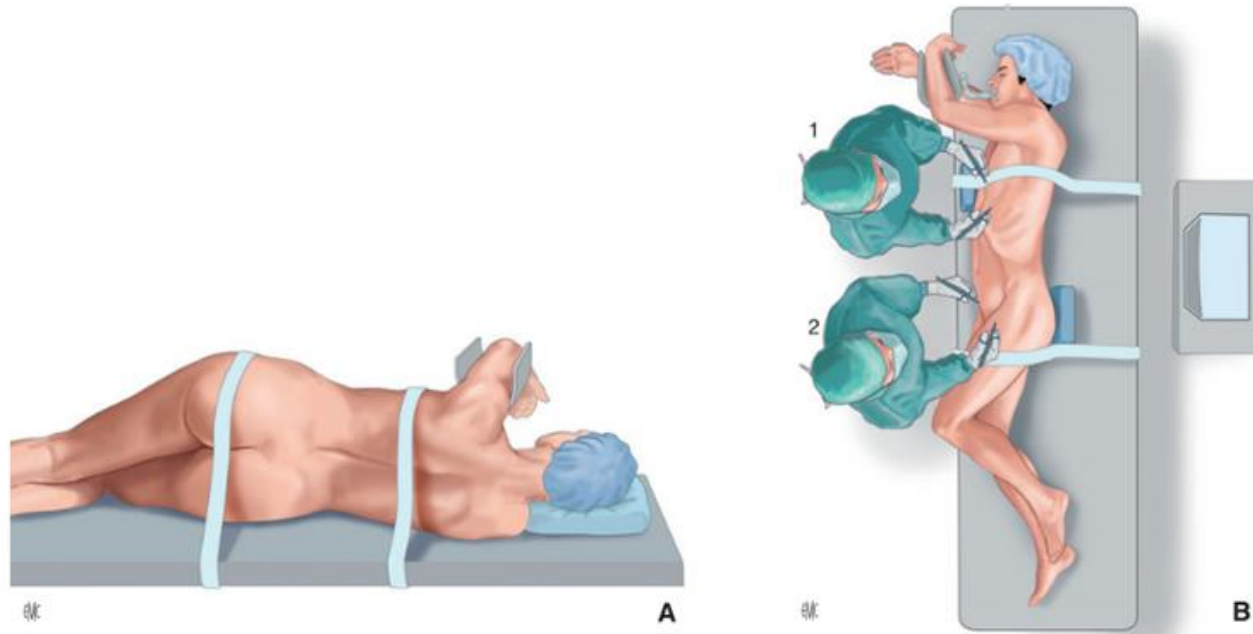


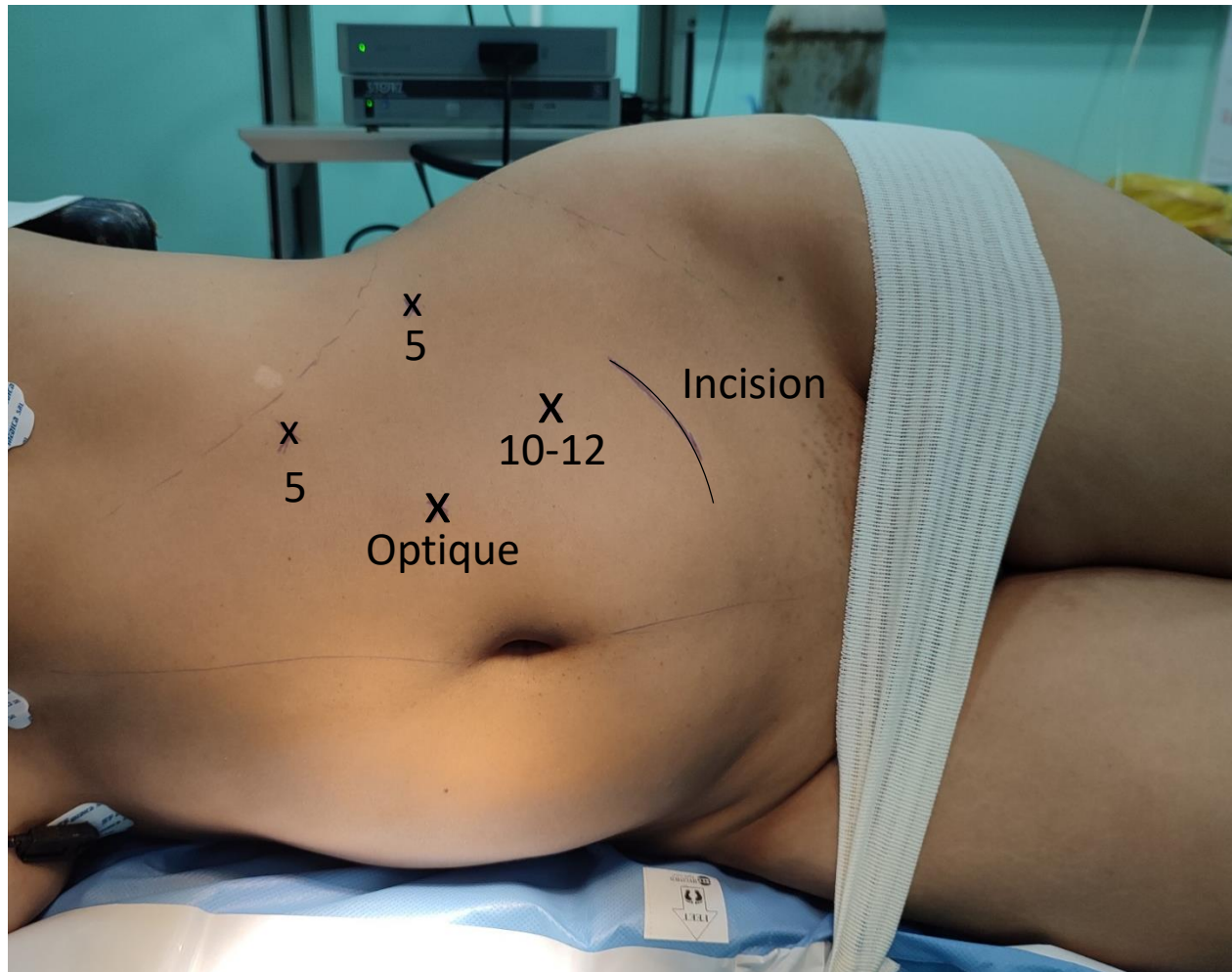
Figure 1.

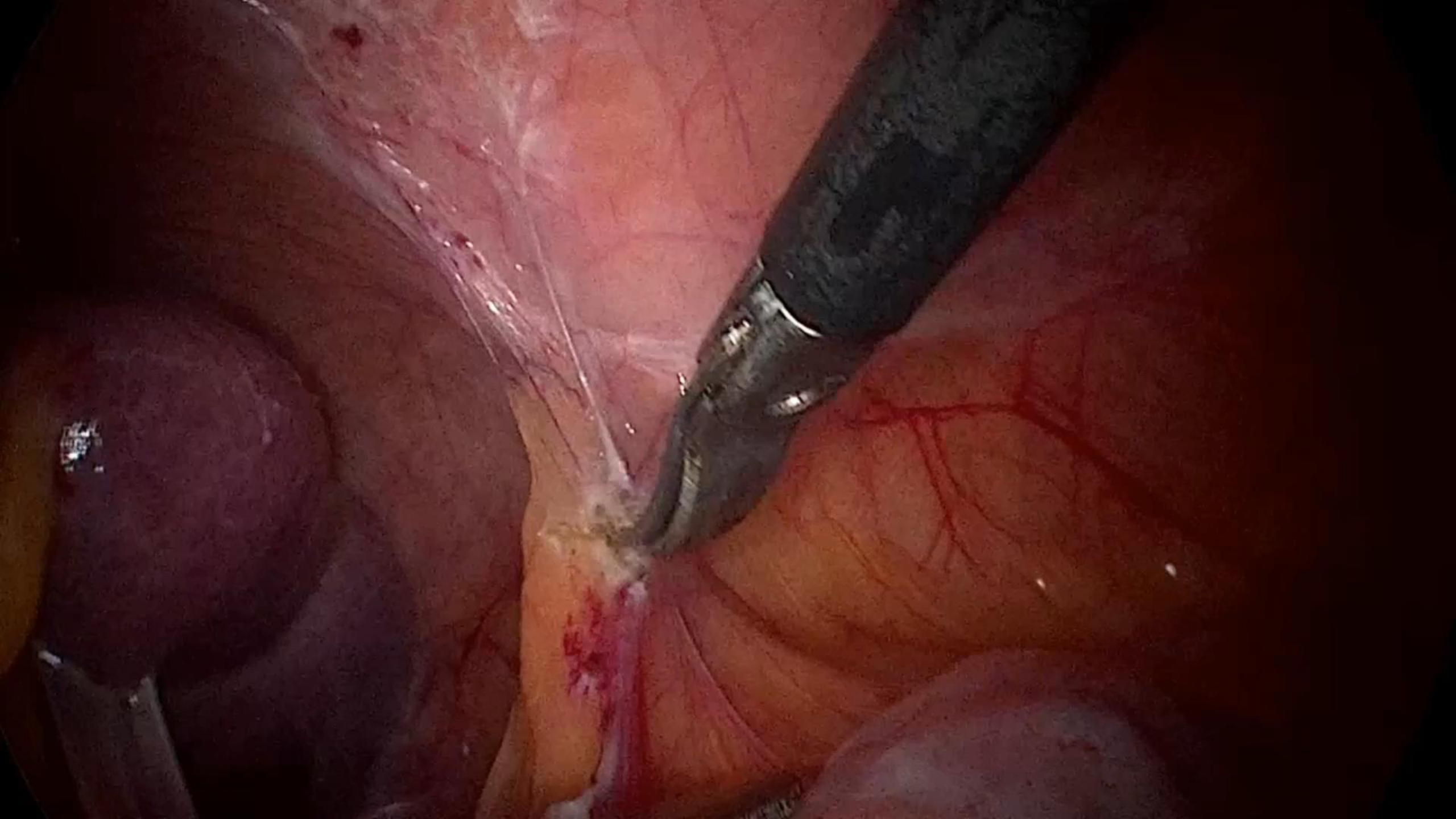
A. Installation du patient sur la table opératoire. Installation en décubitus latéral du côté opposé au rein opéré, l'abdomen du patient positionné au bord de la table conservée à plat.

B. L'opérateur (1), et son aide (2) se situent face au patient et l'écran de coelioscopie dans le dos du patient. Dans le cas ici présent, le patient est installé pour une néphrectomie élargie gauche.

Lanz C, Sanchez Salas R. Néphrectomie laparoscopique transpéritonéale. EMC - Techniques chirurgicales - Urologie 2021;38(3):1-11 [Article 41-036].

NUT laparoscopique dans notre service :





Suites opératoires :

- Durée opératoire moyenne = 150 minutes
- Reprise du transit au 2^{ème} jour
- Ablation du drain au 2^{ème} jour
- Sortie au 2^{ème} ou 3^{ème} jour post-opératoire

Conclusion :

- Technique séduisante
- Reproductibilité
- NUT : Laparo = Open (résultats oncologiques)
- Gain de temps !
- Indications / sélection des patients
- Précautions +
- Collerette par voie ouverte ++

Merci de votre attention !

