



Laparoscopic radical nephrectomy with inferior vena cava thrombectomy: highlight of key surgical steps

A. Sim¹, T. Todenhöfer², J. Mischinger², O. Fahmy², J. Boettge², S. Rausch², S. Bier², S. Aufderklamm², A. Stenzl², G. Gakis², C. Schwentner²

¹ Department of Urology, Singapore General Hospital, Singapore; ² Department of Urology, Eberhard-Karls University Tuebingen, Germany

ABSTRACT

Objective: Vascular involvement in the form of renal vein (RV) or inferior vena cava (IVC) thrombus can be seen in 4-10% of patients presented with RCC. In patients without presence of metastasis, surgical treatment in the form of radical nephrectomy remains the treatment of choice with 5-year survival rates of 45-70%. Open surgery is still the first treatment option of choice at the moment for RCC patients with IVC thrombus.

Materials and Methods: In our study, we are reporting a case of patient with RCC and level I IVC thrombus treated with laparoscopy. Our patient is a 72 years old man with underlying co-morbidity of hypertension and chronic kidney disease (CKD) presented with right-sided RCC. The CT scan done showed a large right renal upper pole tumor measuring 8.4x5.2cm with level I IVC thrombus (Figure-1). There were no regional lymphadenopathy and the staging scans were negative.

Results: The operative time was 124 minutes and blood loss was minimal. The patient was progressed to diet on POD 1 with bowel movement on POD 2. There was no significant change in the pre and post-operative glomerular filtration rate (GFR). The surgical drain was removed on POD2. The patient was discharged well on POD 5. There were no perioperative complications. The pathology was pT3bN0M0 Fuhrman grade II clear cell RCC.

Conclusions: As a conclusion, laparoscopic radical nephrectomy and IVC thrombectomy is a complex and technically demanding surgery. With advancement of surgical skills as well as technology, more cases of minimally invasive laparoscopic radical nephrectomy and IVC thrombectomy can be performed to improve the perioperative outcomes of carefully selected patients in a high volume center.

Figure 1 - Picture showing pre-operative CT scan showing right renal tumor with thrombus extending into IVC at the level of renal vein.



ARTICLE INFO

Available at: www.int brazjurol.com.br/video-section/sim_856_857/

Int Braz J Urol. 2016; 42 (Video #8): 856-7

Submitted for publication:
February 21, 2015

Accepted after revision:
October 01, 2015

CONFLICT OF INTEREST

None declared.

REFERENCES

1. Sun M, Thuret R, Abdollah F, Lughezzani G, Schmitges J, Tian Z, et al. Age-adjusted incidence, mortality, and survival rates of stage-specific renal cell carcinoma in North America: a trend analysis. *Eur Urol.* 2011;59:135-41.
2. Scales CD Jr, Smith AC, Hanley JM, Saigal CS; Urologic Diseases in America Project. Prevalence of kidney stones in the United States. *Eur Urol.* 2012;62:160-5.
3. Kaouk JH, Khalifeh A, Hillyer S, Haber GP, Stein RJ, Autorino R. Robot-assisted laparoscopic partial nephrectomy: step-by-step contemporary technique and surgical outcomes at a single high-volume institution. *Eur Urol.* 2012;62:553-61.

Correspondence address:

A. Sim, MD
Department of Urology, Singapore General Hospital
Outram Road Singapore 169608, Singapore
E-mail: allen_sim@hotmail.com

EDITORIAL COMMENT: LAPAROSCOPIC RADICAL NEPHRECTOMY WITH INFERIOR VENA CAVA THROMBECTOMY: HIGHLIGHT OF KEY SURGICAL STEPSPhilippe E. Spiess ¹¹ *Department of Urologic Oncology. H. Lee Moffitt Cancer Center, Tampa, Florida, USA*

In this video by Sim et al. (1), the authors nicely depict how laparoscopic surgery can be employed to tackle locally advanced renal tumors with venous vascular extension. The authors are to be congratulated on their elegant approach to such a case resulting in minimal blood loss, enhanced perioperative recovery, and most importantly strictly adhering to the essential principles of surgical oncology with complete tumor eradication. This being said, I would like to emphasize the last statement made by the authors in their abstract which is that such an approach should be conducted in only highly selected cases at centers of excellence. I think low level IVC tumor thrombi (Mayo classification level 1 and 2) maybe appropriate to address in this manner in specific instances but tumor thrombi exhibiting intrahepatic or intracardiac extension (level 3 and 4, respectively) should be empirically approached using an open approach although some recent reports have raised the potential of robotic minimally invasive surgery in very highly selected cases. One can never forget the inherent morbidity associated with such high level IVC tumor thrombi cases, where the margin for error is infinitely small. Rapidly evolving technology will continually push the envelope as to how we perform surgery but the onus lies upon us as treating surgeons to always place the safety and wellbeing of our patients as the unwavering Hypocratic oath we will always adhere to.

REFERENCE

1. Sim A, Todenhöfer T, Mischinger J, Fahmy O, Boettge J, Rausch S, et al. Laparoscopic radical nephrectomy with inferior vena cava thrombectomy: highlight of key surgical steps. *Int Braz J Urol.* 2016;42:856-8.

Philippe E. Spiess, MD
Assistant Professor of Urologic Oncology
H. Lee Moffitt Cancer Center
Tampa, Florida, USA
E-mail: philippe.spiess@moffitt.org