

Peer Review File

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Reviewer A

This is a nice review paper on surgical treatments of kidney cancer with tumor thrombus, describing the history of their development, key concepts of the surgical procedures, and their state of the art. The reviewer personally likes this narrative review paper written by expert surgeons. The reviewer believes that this paper attracts readers involved in surgical treatments for patients of the disease.

The authors may want to address the following points before publication.

- 1_ Although the reviewer enjoyed reading this paper, it would improve understanding by readers to provide some figures summarizing surgical procedures recommended by the authors according to the levels of tumor thrombus.
- 2_ Line 171: Please spell out TEE at its first appearance.

Comment 1: Although the reviewer enjoyed reading this paper, it would improve understanding by readers to provide some figures summarizing surgical procedures recommended by the authors according to the levels of tumor thrombus.

Reply 1: We thank you the reviewer for the comments and recommendations. We agree that a figure summarizing the surgical procedures according to TT level would be beneficial for the paper. We have created an original figure and have submitted it to the online portal.

Changes in the text: We have added one figure explaining the surgical maneuvers required at each TT level (line 183) with corresponding figure legend (line 809-814).

Comment 2: Line 171: Please spell out TEE at its first appearance.

Reply 2: We thank the reviewer for the suggestion. We have spelled out transesophageal echocardiogram (TEE).

Changes in the text: Line 172.

Reviewer B

Excellent article

We thank the reviewer.

Reviewer C

Great review. Well written and upto date.

My only recommendation is to include the latest advancements in hybrid techniques for IVC thrombus in RCC and expand the discussion to include

Example Ho D, Samarakoon L, Kai TY, Kum S, Lim D. Novel Use of Capturex Device and Reliant Balloon for Inferior Vena Cava Tumor Thrombectomy: A Case Report and Review of Literature. Vasc Endovascular Surg. 2019 May;53(4):351-354. doi: 10.1177/1538574419831834. Epub 2019 Mar 3. PMID: 30827200.

There are many new hybrid techniques reported.

Thank you very much

Comment 1: My only recommendation is to include the latest advancements in hybrid techniques for IVC thrombus in RCC and expand the discussion.

Reply 1: We thank the reviewer for the recommendation and agree with the suggestion to include hybrid techniques for resection of IVC thrombus in the discussion.

Changes in the text: Lines 432-447.

Reviewer D

The authors carried out a narrative review about the surgical evolution of radical nephrectomy and tumor thrombectomy, moreover they reviewed new surgical advances in this field with laparoscopic and robotic approach.

They attempted to summarize all the most important literature of this topic and in my view, they did it correctly. They accurately described the most important articles in the recent literature, and gave new insights about the future evolution of this kind of surgery with the robotic approach.

There is a small mistake concerning the reference style of the journal, if a report has more than three authors, the first three authors should be listed followed by “et al.” but the authors only listed the first author followed by et all, in my opinion, it should be changed before publishing.

In conclusion, I would like to congratulate the authors for its excellent work.

Comment 1: There is a small mistake concerning the reference style of the journal, if a report has more than three authors, the first three authors should be listed followed by “et al.” but the authors only listed the first author followed by et al, in my opinion, it should be changed before publishing.

Reply 1: We thank the reviewer for the suggestion. The reference style has been changed to Vancouver according to the journal’s preference. This automatically includes all authors to be listed in the citation.

Changes in the text: Lines 551-799.

Reviewer E

Well written narrative review on radical nephrectomy with IVC thrombectomy.

Major Points:

- Strongly consider including a section describing the use of neoadjuvant systemic therapy and radiation therapy. Should these approaches be adopted?

Minor Points:

- Consider adding a paragraph on the role of adjuvant systemic therapy as patients with pT3 RCC would be eligible. If adjuvant therapy is too far outside the scope of your manuscript you can state this in the paper.

- Consider emphasizing the importance of thrombus cases being managed by high volume surgeons at high volume centers via a multidisciplinary team (uro onc, cardiac surgery, cardiac anesthesia, vascular surgery/transplant surgery/surgical oncology, perfusionist, etc).

Comment 1: Strongly consider including a section describing the use of neoadjuvant systemic therapy and radiation therapy. Should these approaches be adopted?

Reply 1: We thank the reviewer for the suggestion. We agree that neoadjuvant systemic therapy and radiation therapy is an important topic to elaborate on in the evolution of surgical management of RCC with IVC TT. We included a section on the recent advances in these treatments and their report in the literature.

Changes in the text: Lines 301-332.

Comment 2: Consider adding a paragraph on the role of adjuvant systemic therapy as patients with pT3 RCC would be eligible. If adjuvant therapy is too far outside the scope of your manuscript you can state this in the paper.

Reply 2: We thank the reviewer for the suggestion. As the review discusses the evolution of surgical management of RCC with TT, we believe elaborating on adjuvant therapy is out of scope and is better fitted in a separate review on immunotherapy management of RCC with IVC TT. We have mentioned this in our discussion of neoadjuvant systemic therapy and radiation therapy.

Changes in the text: Lines 330-332.

Comment 3: Consider emphasizing the importance of thrombus cases being managed by high volume surgeons at high volume centers via a multidisciplinary team (uro onc, cardiac surgery, cardiac anesthesia, vascular surgery/transplant surgery/surgical oncology, perfusionist, etc).

Reply 3: We thank the reviewer for the suggestion. We agree that the involvement of multidisciplinary team is crucial for the successful and safe treatment of RCC with IVC TT and have now included a statement reflecting this in the Conclusion.

Changes in the text: Lines 494-497.