Author's response to reviews

Title: Surgical resection of a renal cell carcinoma involving the inferior vena cava: the role of the cardiothoracic surgeon

Authors:

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Version: 2 Date: 16 October 2010

Author's response to reviews:

1) Reviewer: dimitrios Dr. med. PhD, FETCS dougenis

The references should be written according to the journal instruction: Done

The authors should clarify and describe the stages: The level of the IVC involvement as defined in the literature (1),(3),(4),....is added in Introduction

2) Reviewer: STAVROS SIMINELAKIS

The authors must add the long-term survival( in months) of the patients.

Two of the discharged patients were lost to follow up. Of the remaining patients, 2 have had tumor recurrence and one had pulmonary metastasis at 2 years on follow up chest XRay. Those 3 patients were referred for adjuvant chemotherapy. The cumulative postoperative follow-up of the remaining four patients was 45+/-11 months. All discharged patients were alive at the last follow up and free of recurrence.

3) Reviewer: Panagiotis Dedeilias

4) Reviewer: Efstratios Apostolakis

1. In the table I, you have omitted a column (left) with the number of each-one of the cases. Done

2. By mistake your “Surgical approach” is under the “Results”; Corrected

You have used some abbreviations without the corresponding epexegesis.: Done

4. It is worthy for the study, referring some important references, such as the
References have been amended.

5) Reviewer: Dimitrios Angouras

As no cardiopulmonary bypass (CPB) was employed in the 7th patient, what was “the role of the cardiothoracic surgeon” in this case and why was this patient included in the series? The fact that a level III tumor was resected without CPB appears inconsistent with the operative strategy proposed by the authors. This requires commentary.

During the beginning of this program, Venovenous bypass was used in one patient (number 7) with level III disease. However the technique was deemed cumbersome and unsatisfactory, mainly due to excessive blood in the surgical field, resulting in suboptimal exposure.

Please, explain why splitting the diaphragm through the central tendon towards the IVC is necessary to achieve control of the cavo-atrial junction.

Bulky disease extending into the right atrium may be better controlled by splitting the diaphragm through the central tendon towards the IVC. That enables extension of the Right atrial incision towards the IVC for direct resection of severely adhere tumours (Patient number 3).

Results – Outcome: The outcome is not adequately reported. Specifically:
1 “The postoperative morbidity is reflecting the preoperative compromise health status of this group of patients” – Please explain.
2 “Blood and blood product requirement was high (7 out of nine patients)” – Please, expand (number of red blood cell units, FFP, platelets etc). This is helpful information for the interested reader.
3 “Inotropic support was required in 5 patients” – for how long?
4 The overall outcome profile is unclear. Most probably the reported complications clustered in few patients whereas the remainder had a relatively uneventful course. I think that a table is the best way to present the operative outcome with clarity, conciseness, and adequacy and I would strongly recommend tabulation of the results.

Outcome
During the beginning of this program, Venovenous bypass was used in one patient (number 7) with level III disease. However the technique was deem
cumbersome and unsatisfactory, mainly due to excessive blood in the surgical field, resulting in suboptimal exposure.

Cardio Pulmonary Bypass was used in eight (8) patients and hypothermia and circulatory arrest in all patients with level IV disease.

The operative time range from 3 hours 52 minutes to 9 hours 36 minutes. Estimated blood loss was 1850 mL (range 950 to 3800 mL). Blood and blood product requirement was high (7 out of nine patients). The average blood transfusion was 2 units of red Blood Cells (range between 1 and 4 Units). Blood products were used in all four patients following hypothermia and circulatory arrest. Cell-saving techniques used routinely in our institution.

Inotropic support by means of Dopamine and Noradrenaline was used in 5 patients. Average intensive care unit length of stay was 19 days (range, 1 to 164 days). In three (3) patients (33.3%) the ICU stay was prolonged. Furthermore one (1) patient required a tracheostomy (11.1%). Two patients developed septicemia (one MRSA positive) and one patient develop a CVA. Two patients died; one from septicaemia post-operative day 55 and one from multiple organ failure post operative day 164. The mean size of the renal mass was 5.2 cm (range, 3.5 to 11.2 cm). Histological examination showed renal cell carcinoma of clear type in 8 patients and papillary type in 1 patient. Lymph node metastasis was detected in 2 patients.

Two of the discharged patients were lost to follow up. Of the remaining patients, 2 have had tumor recurrence and one had pulmonary metastasis at 2 years, on follow up chest XRay. Those 3 patients were referred for adjuvant chemotherapy. The cumulative postoperative follow-up of the remaining four patients was 45+/11 months. All discharged patients were alive at the last follow up and free of recurrence.

Discussion: “The incidence of level III & IV disease was around 40%. Therefore this pathology is genuinely an uncommon condition; furthermore it is usually level III and IV of tumor extension that alarms the urologists to seek cardiothoracic expertise.” Phrases like this have somewhat problematic coherence and impair the quality of the article. Overall, the discussion is not well structured and in some parts the text is somewhat difficult to read. Extensive rewriting is, therefore, required.

Extensive rewriting of the “Discussion” has been carried out