

Format for ANSWERING REVIEWERS

August 13, 2014

Dear Editor,



Please find enclosed the edited manuscript in Word format (file name: 12343-review.docx).

Title: Influence of breathing movements and Valsalva maneuver on vena caval dynamics.

Author: Alicia Laborda, Sergio Sierre, Mauro Malve, Ignacio De Blas, Ignatios Ioakeim, William T Kuo, Miguel Angel De Gregorio.

Name of Journal: *World Journal of Radiology*

ESPS Manuscript NO: 12343

The manuscript has been improved according to the suggestions of reviewers:

1 Format has been updated

2 Revision has been made according to the suggestions of the reviewer

(1) This study was primarily designed to investigate the morphologic, geometric and haemodynamic changes of IVC during respiratory movements, and Valsalva maneuver was chosen as a standard method. However, the design of this study could not answer this question. 1) Patients with different diseases might have different performance of Valsalva, inducing results bias; 2) In methods, there was no statement about the consistence of image catching and Valsalva; This is the key point of this study; 3) Language needs improvement; 4) Autonomic nervous system assessment is suggested from clinical aspect.

1) We totally agree with the reviewer, that is the cause for the high standard deviation in the related results. We have tried to reduce this bias excluding patients who weighted over 30 kg/m² of body mass index (BMI), unable to follow instructions, patients with cardiovascular or pulmonary pathology and patients who underwent abdominal surgery or had any pathology of the abdominal walls (hernia, etc). All patients were women with breast cancer or men with hematopoietic tumors or patients in need of neoadjuvant treatment for colorectal or urologic cancers. It is a very homogeneous sample, so we think we have got quite a normal distribution. Anyway, it was already included as a potential limitation of the study in the discussion. We have broadened the exclusion criteria in Methods.

2) Port-a-cath placement was previous to CT scan. We did three rehearsals with the patient on the table, instructing then how to perform a correct maneuver, always monitoring inspiration and pressure in the abdomen manually. We have some videos about that; we don't know if it would be interesting to include them for the e-version. We repeat the rehearsal in the CT table, we inject the contrast and perform Valsalva at 60 s delay, taking the Valsalva acquisition and just afterwards the neutral respiration acquisition. Using the helicoidal CTscan we didn't need to repeat the contrast injection. We have included a small explanation in Methods.

3) Our native English speaker has made a deeper review of the English. We hope it has been corrected.

4) All patients were monitorized with pulse oximetry and ECG in the Angio and CT suite. We have included it in material and methods. We recognize it would have been a good idea to record a mean heart rate and respiratory frequency during the maneuvers, but now we find impossible to retrieve that data. We accept your suggestion for successive studies.

(2) Influence of breathing movements and Valsalva maneuver on Vena Caval dynamics are perfect presented from Laborda A et al. It is very interesting paper for reader.

No comments.

(3) The manuscript presents a very interesting study evaluating the influence of neutral breathing and Valsalva maneuver on the diameters and intravascular pressure of the IVC at the suprarenal, juxtarenal and infrarenal level. The study is sound and may be a valuable contribution to the literature. Minor comments: I do not understand why the authors used a simplified elliptical formula to calculate the cross-sectional area, instead of using segmentation software to precisely calculate the area. Such tools are available with regular segmentation software used in postprocessing of radiologic images. Such software can be easily used for 3D VR images. Please discuss. The intravascular blood pressure data has been collected in the Angio suite. Please mention.

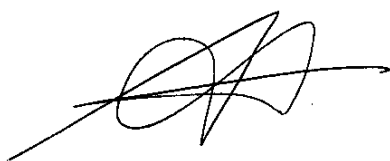
1) We used the formula as a validation for the postprocessing measurement software. The results were quite similar but, of course, we finally decided to use the digital area calculation. We have clarified this in the text. Anyway if you think it could be confusing, the formula paragraph can be removed from the text.

2) We have added that text in the manuscript.

3 References and typesetting were corrected

Thank you again for publishing our manuscript in the *World Journal of Radiology*

Sincerely yours,

A handwritten signature in black ink, consisting of a series of loops and a long horizontal stroke extending to the right.

Alicia Laborda, DVM, MD, PhD
University of Zaragoza
Miguel Servet 177
50003 Zaragoza (Spain)
E-mail: alaborda@unizar.es