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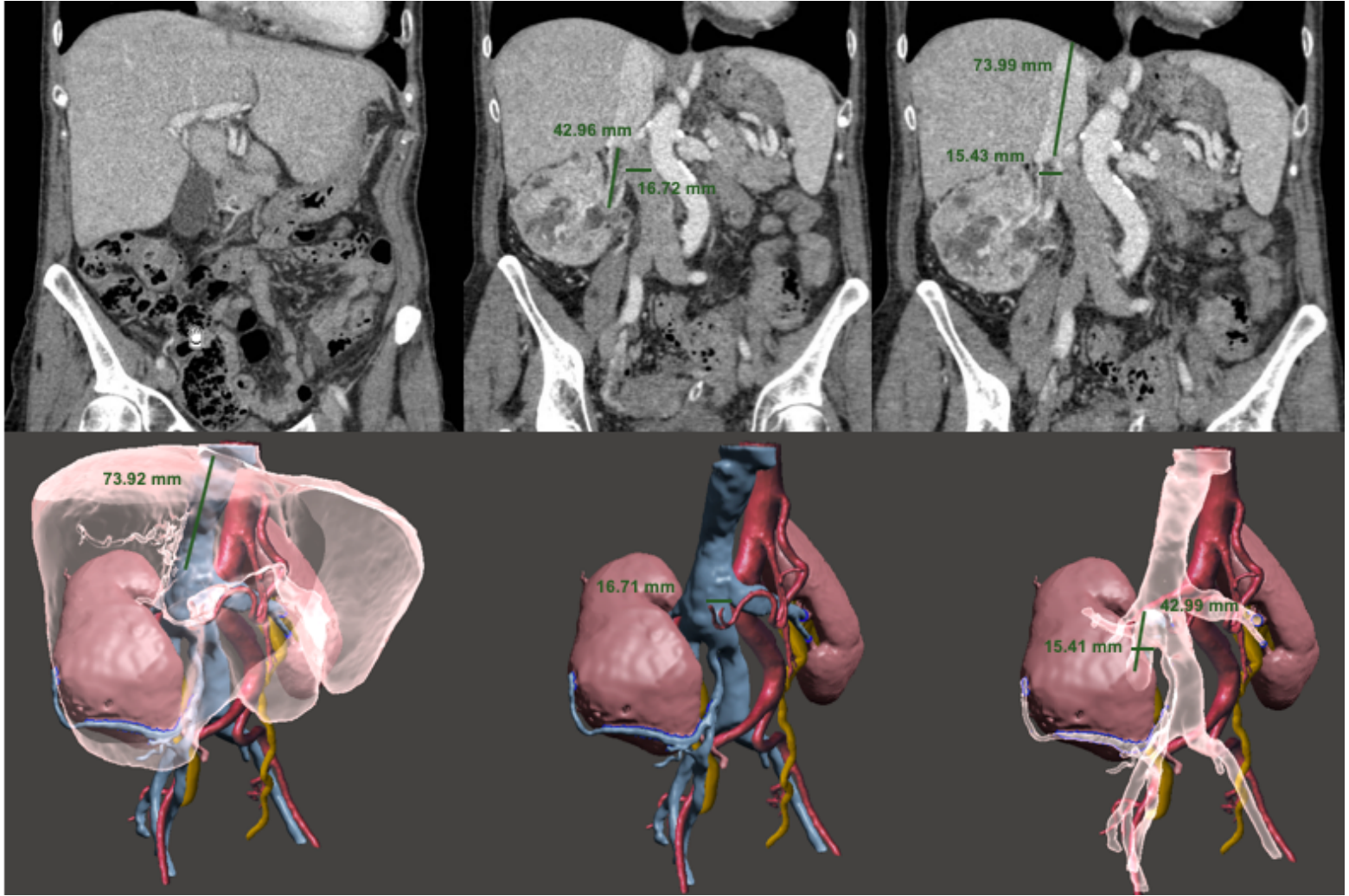
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Introduction & Objectives: The management of Renal Cell Carcinoma (RCC) with Venous Thrombus Extension VTE is very complex and it's surgery of extreme magnitude; hence accurate surgical planning becomes essential to maximize the treatment efficacy and outcome. Surgical planning aims also at preparing the surgeon to the possible intra-operative complications. Moreover, it can significantly reduce the intervention invasiveness, bringing to a decrease in intervention times, mortality and hospital stay. So far, this planning is based on the best diagnostic images (usually CT or RM), leaving some degree of uncertainty in the surgery. A patient-specific 3D virtual image can be created from their conventional radiological images using different softwares. 3D images enhance anatomy understanding and may help to improve surgical planning. Our objective is to obtain a feasible and accurate 3D virtual image and to evaluate surgeons feedback when using this technology for surgery planning.

Materials & Methods: A specific protocol was developed to obtain a computed tomography (CT) image: early arterial and nephrogenic phase. ITK-snap ® and VirSSPA Software ® (developed in our center) were used to segment the areas of interest. The resulting 3D mesh was processed with MeshMixer ® and Cura ®. Some measures were taken in the CT and the 3D image to evaluate the accuracy (less than 1 mm of difference). The surgery planning was made using the CT and the 3D virtual image, and the surgery was performed afterwards. 6 expert urologists from two different hospitals were asked to answer a validated satisfaction questionnaire (doi: 10.1093/ejcts/ezx208).

Results: 100% of urologist thought that the 3D image was very useful for surgery planning and that was complementary to the conventional images, offering a better understanding of the problem. All of them would recommend the model to other colleges.



Conclusions: · A feasible and accurate 3D image was obtained

· 100% of urologist thought it was useful for surgery planning and would recommend the model to colleges