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Introduction & Objectives: During the last few years, the 3D Virtual reality has been introduced in a wide variety of fields, including the surgical one. We show its utility on a robotic renal cystectomy, helping to identify better the tumor vascularization.

Materials & Methods: We present the case of a woman who is 52 years old, with no relevant medical history, with an incidental diagnosis of a Bosniak category 2F cyst in an abdominal ultrasound. After 15 years of medical follow up, on a control CT scan, the lesion is reported as a Bosniak category 3 cyst of 4.4cm of major diameter, located on the upper pole of the right kidney. Due to the probability of malignancy, a robotic cystectomy is proposed. Based on the CT scan images, a 3D reconstruction is made; letting a better knowledge of the lesion and vascularization.

Results: For this procedure, transperitoneal technique was used, in the flank position, including a 12mm camera port and 3 robotic ports. The 3D model let us the skeletonization of the renal arterial branches and selective clamping of the tumor artery. After mass excision, a renorrhaphy to ensure hemostasis was made. In our case, the operative time was 175 minutes and the hospital stay was 5 days. The pathologist reported a multilocular cystic renal neoplasm with low potential for malignancy and respected edges. She is currently asymptomatic and with preserved renal function.

Conclusions: In our experience, the robotic approach combine with the 3D virtual reality models, facilitates vascular dissection on renal tumors, in order to clamp selectively the tumor artery branches.