

case	age	gender	time since open(month)	op time	hospital stay	follow up	complications
12	43	m	30	210	6	14	
13	45	m	23	170	4	12	minor colonic serosal injury
14	27	f	26	200	4	18	
15	38	f	44	180	5	12	

Source of Funding: None

**V2158**  
**INTRA-OPERATIVE ULTRASONOGRAPHY USING MINIATURE DROP-TYPE ULTRASOUND PROBE MANIPULATED BY SURGEON DURING ROBOT-ASSISTED PARTIAL NEPHRECTOMY**

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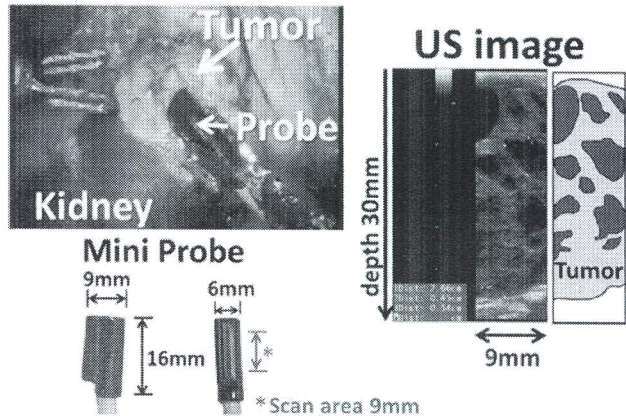
**INTRODUCTION AND OBJECTIVES:** Conventional flexible laparoscopic ultrasound (US) probe or drop-type finger-sized US probe have been used for US guidance during robotic-assisted partial nephrectomy (RAPN). However, disadvantage of the flexible US probe included limited angulations, and requirement of additional assistant to manipulate US probe, while the size of drop-type finger-sized US probe may be suboptimal. We evaluated the utility of miniature US probe (Hitachi Aloka Medical Ltd. CT, USA) manipulated by console surgeon.

**METHODS:** Ten patients with age (61 years), median body mass index (27.7), tumor size (3.5 cm), C-index (1.6), RENAL score (8) and PAUDA score (8) were enrolled, including 6 cases of zero-ischemia partial nephrectomy. Mini probe was designed as drop-type h to be manipulated by robotic arm with a flexible cord through the laparoscopic port. The size was 9 ~16 ~6 mm in diameter, and multi-frequency from 5 to 13 MHz was available, to allow various penetration of US. Intra-operative US data was transferred to the da Vinci console to provide the real-time US image shown directly to surgeon in parallel to the surgical view in the Tile-pro display.

**RESULTS:** 9 renal cell carcinomas and 1 angiomyolipoma were dissected with negative margin in all cases (100%). The median time to use intra-operative use of the mini probe was 3minutes. Based on the expert surgeon's rating for the utility of the probe, its utilities were excellent regarding 2 aspects as following: (a) visualization of tumor vascularity and peri-tumor vascularity, and (b) superiority in manipulation of the probe in comparison to the finger-size drop-type US probe. However, the optimal size of the drop-type US probe remained debatable, since the scanned area (9mm) of the miniature US probe seems too small to visualize the tumor margin in case of the tumor with larger diameter. Values of serum creatinine at the time of preoperative (1.18) and discharge (1.10) had no statistical difference (p=0.6).

**CONCLUSIONS:** To visualize anatomy beyond the endoscopic view such as tumor margin and feeding artery in console display using intra-operative drop-type US probe manipulated by console surgeon provided a new opportunity of image-guided RAPN. The optimal size of intra-operative drop-type US probe remained debatable.

**Visualization of Tumor**



Source of Funding: None

**V2159**  
**ROBOT-ASSISTED LAPAROSCOPIC SIMPLE ENUCLEATION OF AN INTRAPARENCHYMAL HILUM ABUTTING RENAL TUMOR**

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**INTRODUCTION AND OBJECTIVES:** We present our surgical technique for Intraparenchymal RCC hilum abutting tumors to show advantages of robot-assisted Simple Tumour Enucleation (TE).

**METHODS:** We show our surgical technique for the treatment of completely intraparenchymal hilum abutting tumor in a 39 years old patient, with incidental diagnosis of 4cm left RCC. A 12mm trocar, two 8mm robotic trocars, a 8mm and a 10mm trocars for the bedside assistant are placed. After Da Vinci© docking, the kidney is completely separated from the perirenal fat to exclude satellite lesions not detected by the imaging technique; the renal pedicle is carefully isolated and the artery is selectively clamped before TE. Then the kidney capsule is sharply incised starting a few millimeters away from the lesion toward the peritumoral capsule; when the pseudocapsule is reached the tumor is enucleated by blunt dissection and scissors using the natural cleavage plane between the pseudocapsule and normal parenchyma. Adopting sliding clips technique, on the bed of resection bleeding vessels and openings in the collecting system are closed using a 3-zero monofilament running sutures. Then the artery is early declamped and the capsular sutures is performed with horizontal interrupted sutures of 2-0 Vicryl filament, apposing hemostatic agents.

**RESULTS:** Above all we performed 108 robotic assisted TE between 2011-2012 for RCC. Operation time: 140min. WIT: 17min. Intraoperative blood loss: 200cc. Length of hospital stay: 4 Days Creatinine serum III p.o. day: 0,91mg/dL. Pathologic outcome: Clear Cell RCC Fuhrman G2 3,5x3cm. Negative surgical margins. No evidence of tumour diffusion in peritumoral adipose tissues. pT1a pNx pMx

**CONCLUSIONS:** In case of intraparenchymal hilar tumours, thanks to image magnification and endo-wrist © movements, the Da Vinci Surgical System allows to perform TE in a feasible and safe manner.

Source of Funding: None



mean age compared to NHW (59.6 years vs 65.3 years,  $p < 0.0001$ ). Clear cell RCC was more prevalent among Hispanics (88.9% vs 85%,  $p < 0.004$ ). Hispanics were found to have lower AJCC stage at diagnosis (I/II vs III/IV) than NHW (67.4% vs 62.2%,  $p < 0.044$ ). Overall Hispanics were found to have a greater incidence of comorbidities such as chronic kidney disease (2.6% vs 0.7%,  $p < 0.0001$ ), and diabetes (23.8% vs 15.9%,  $p < 0.001$ ), but still were more inclined to receive surgery (84.2% vs 77.9%,  $p < 0.004$ ). On multivariate analysis, the presence of metastases ( $P < 0.001$ ), nodal involvement ( $P < 0.001$ ), increased tumor size ( $P < 0.001$ ), non-surgical management ( $P < 0.001$ ), increasing age ( $P < 0.001$ ), and Hispanic race ( $P < 0.023$ ) were independent predictors of worse outcome.

**CONCLUSIONS:** Even within a healthcare system with similar access to care, Hispanics with RCC were younger, had greater comorbidities, and more frequently had clear cell RCC. Despite a lower AJCC stage and increase receipt of surgery, Hispanic ethnicity was an independent predictor of worse outcome. Further work is necessary to confirm this health disparity in other large datasets.

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### MP73-05

#### WHEN TO PERFORM A STAGING CHEST-CT SCAN BEFORE SURGICAL TREATMENT FOR KIDNEY CANCER

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**INTRODUCTION AND OBJECTIVES:** The decision to perform a staging chest-CT scan [CCT] remains an empirical process, due to the lack of predictive models assessing the risk of pulmonary metastasis at kidney cancer [RCC] diagnosis. The aim of the study was to predict the risk of pulmonary metastasis at CCT in order to provide objective criteria for patient selection.

**METHODS:** An assessment of 1,946 patients surgically treated for RCC and collected in a prospective institutional database was performed. The outcome of the study was the presence of pulmonary metastasis at staging CCT. Patients without a pre-operative CCT scan but with a negative post-operative CCT scan were considered negative at staging by-definition. A multivariable logistic regression model was fitted to predict positive CCT scan. Predictors consisted of preoperative haemoglobin/platelet ratio, clinical tumour stage [cT], clinical nodal stage [cN] and presence of systemic symptoms. A 2000-sample bootstrap validation was used to estimate H-index. Decision curve analysis was used to assess the performance of the model in clinical-decision making.

**RESULTS:** Overall, CCT scan resulted negative in 1827 (94%) patients and positive in 119 patients (6%). Preoperative haemoglobin/platelet ratio was associated with higher risk of positive CCT (Odds Ratio [OR] 1.04; 95% Confidence Interval [CI] 1.02-1.06;  $p < 0.0001$ ). Moreover, cT1b (OR 2.69; CI 1.16-6.22;  $p = 0.02$ ), cT2 (OR 9.13; CI 4.13-20.18;  $p < 0.0001$ ) and cT3-cT4 (OR 15.41; CI 6.73-35.25;  $p < 0.0001$ ) resulted associated with higher risk of positive CCT relative to cT1a patients. Similarly, cN1 (OR 3.21; CI 2.05-5.01;  $p < 0.0001$ ) and presence of systemic symptoms (OR 3.88; CI 2.39-6.31;  $p < 0.0001$ ) were also associated with higher risk of positive CCT. Following a 2000-sample bootstrap validation, H-index of the proposed model resulted 0.88 (CI 0.85-0.92). At decision curve analysis, the net benefit of the proposed model was superior than the treat-all and treat-none strategies.

**CONCLUSIONS:** Based on the proposed model, it is possible to estimate the risk of positive CCT at kidney cancer staging using pre-operative characteristics with optimal predictive accuracy. At decision curve analysis, the net benefit of the proposed model was superior than the treat-all and treat-none strategies. If CCT is planned only when the risk of a positive results is  $> 1\%$  a negative CCT is spared in 37% of the population and a positive CCT is missed in  $< 1\%$  of the population only.

These figures support the use of the proposed model in clinical-decision making.

**Source of Funding:** None

### MP73-06

#### DIAGNOSIS AND PROGNOSIS OF EPITHELIOID ANGIOMYOLIPOMA: A 15 YEAR FOLLOW UP AT SINGLE CENTER

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**INTRODUCTION AND OBJECTIVES:** Epithelioid angiomyolipoma (AML) is the subtype of AML, which has malignancy potential. We evaluated the clinical characteristics associated with epithelioid AML and the prognosis of epithelioid AML.

**METHODS:** Medical records of 231 patients consist of 204 patients with epithelioid AML and 27 patients with conventional AML were reviewed. Computed tomography (CT) was performed in all patients before pathological confirmation of the disease. Tumor size and Hounsfield unit (HU) were measured on pre-contrast and arterial phase of CT. Pathologic specimens were reviewed by pathologists who are specialized in urologic pathology. Variables associated with epithelioid AML were assessed using multivariate analysis.

**RESULTS:** Patients with epithelioid AML were younger (41.2 years vs. 49.1 years,  $p = 0.001$ ) than patients with conventional AML. Male patients were more common in patients with epithelioid AML (56% vs. 29%,  $p = 0.005$ ). Tumor size was larger in patients with epithelioid AML compared to conventional AML (7.5cm vs. 4.2cm,  $p < 0.001$ ). Difference in HU between pre-contrast and arterial phase was significantly lower in epithelioid AML group (46.6 vs. 65.9 HU,  $p = 0.022$ ). In multivariable logistic regression analysis, younger age ( $p = 0.024$ ) and male gender ( $p = 0.024$ ) were significantly associated with epithelioid AML. Among 27 patients with epithelioid AML, distant metastasis was observed in 8 (29.7%) patients and these patients had larger tumor compared with the other 19 patients (10.8cm vs. 6.1cm,  $p = 0.014$ ). Three patients with metastasis were expired in 10 days, 47 months and 118 months after the diagnosis of the disease.

**CONCLUSIONS:** Patients with epithelioid AML should be carefully followed-up because of malignancy potential. We should not overlook the probability of epithelioid AML, especially in young male patients with larger tumor size.

**Source of Funding:** none

### MP73-07

#### PREDICTION OF LYMPH NODE INVASION IN PATIENTS WITH RENAL CELL CARCINOMA: RESULTS FROM A LARGE INTERNATIONAL CONSORTIUM

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**INTRODUCTION AND OBJECTIVES:** Few models predicting the presence of lymph node invasion (LNI) in patients with renal cell carcinoma (RCC) are available. In this study, we tested the ability of LNI risk estimation relying on clinically attainable variables.

**METHODS:** Between 1987 and 2014, 4,948 RCC patients treated with either partial or radical nephrectomy within a multi-institutional cohort were identified. Multivariable logistic regression analyses