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INTRODUCTION & OBJECTIVES: The prediction of histology of small renal masses (SRM) could be essential for their management, being benign or poorly aggressive in a substantial rate of cases. Recently the RENAL nephrometry nomogram (RNN) offered encouraging results. The objectives of the study is to perform an external validation of the RNN in a cohort of patients submitted to partial nephrectomy (PN) for a SRM (diameter up to 4 cm).

MATERIAL & METHODS: Multicentric study that analyses the data of 506 patients submitted to PN for a SRM between January 2010 and January 2013. For each patient, the probabilities of malignancy and aggressiveness were estimated pre-operatively by the RNN.

A logistic regression model addressed the relationship between the factors included in the RNN and the final histology.

The estimate of malignancy and aggressiveness between malignant vs benign and between aggressive vs non-aggressive cases, respectively, was compared by u-test, and the overall predictive ability of the RNN was evaluated by ROC curves.

RESULTS: Only male gender and L score=2 showed a significant relationship with malignancy at final histology, whereas no relationships were found with aggressiveness.

The nomogram estimation of malignancy in malignant vs benign tumours was 55.9+/-27.1% vs 52.5+/-27.2% (p=0.243, AUC 0.554), while the estimation of aggressiveness in aggressive vs non-aggressive tumours was 51.4+/-27.3% vs 49.6+/-28.1% (p=0.666, AUC 0.523).

The limitations of the study are the lack of a central revision of pathological specimen and radiological imaging.

CONCLUSIONS: The RNN cannot accurately predict histology in the setting of SRM amenable to PN.