

The role of Mayo Adhesive Probability score in operative outcomes: A single center prospective analysis

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Introduction & Objectives: Adherent perinephric fat (APF) is a known risk factor of surgical difficulty during robotic assisted partial nephrectomy (RAPN) in term of limit mobilization of the kidney and isolation of the renal tumor. The Mayo Adhesive Probability (MAP) score predicts APF accurately. The aim of this study is to identify the association between MAP score and operative time (OT) in RAPN.

Materials & Methods: This single-center, prospective cohort study examined 150 consecutive patients who underwent RAPN. MAP scores were recorded based on preoperative computed tomography or magnetic resonance imaging. Clinical data were collected in a prospective database. Logistic models were fitted to test the prediction of longer OT.

Results: For all patients, the median age and body mass index were respectively 59 years (interquartile range [IQR] 52-66 years) and 25.94 kg/m² (IQR 23.71-28.68 kg/m²). We furthermore stratified the patients in three groups based on the results of the MAP score as follows: group A had MAP scores between 0-1, group B had MAP score between 2-3 and group C had MAP score between 4-5. We observed the following distributions: 60 patients for group A, 41 group B and 49 group C. The median OT was 126.5 minutes (IQR 101-150.5 minutes) in the MAP group A, 136 minutes (IQR 112-175 minutes) in the MAP group B and 148 minutes (IQR 118-183 minutes) in the MAP group between C. A statistically significant increase in terms of OT (median OT 148 minutes; p value <0.02) and estimated blood loss (EBL) (median EBL 100 ml; p<0.02) was recorded in the group C patients. In a univariate analysis MAP score significantly predict longer OT (HR =11.49; p<003), and higher EBL (HR=19.4; p<0.02). Fat thickness was correlated to the presence of in-hospital complication (HR=0.63; p<0.03). No significant impact of MAP score was found in terms of length of hospital stay, intraoperative or in-hospital complications.

Conclusions: MAP score was associated with longer OT and higher EBL, so it could be useful when predicting surgical difficulty in patients undergoing RAPN.