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**INTRODUCTION & OBJECTIVES:** Perioperative complications following minimally invasive radical prostatectomy (RP) have been reported in some recent series. Few studies, however, standardized surgical complications and defined potential predictive factors. Our aim was to analyse the incidence of perioperative complications in a large multicenter series of RP; we also assessed pre- and intraoperative variables to identify potential risk factors for surgical complications.

**MATERIAL & METHODS:** Between December 2009 and February 2013, 1622 patients underwent laparoscopic (LPS) or robot-assisted RP in 10 centres. Of these, 760 were evaluable for the analysis on intraoperative complications (ICs) and 566 for the study about the postoperative complications (PCs). All PCs were stratified according to Clavien-Dindo classification. Univariable and multivariable logistic regression analysis were performed to identify risk factors for ICs and PCs. We also performed a multinomial analysis grouping PCs grade I-II and grade III-IV.

**RESULTS:** Overall, we observed 26 (3.4%) ICs in 760 patients and 88 (15.5%) PCs in 566 patients. Of these, 34 were grade I (38.6%), 25 grade II (28.4%), 12 grade IIIa (13.6%), 10 grade IIIb (11.4%) and 2 grade IVa (2.3%), 5 were not classified. Operative time (OT) and LPS approach were associated with an increased risk of ICs ([OR (95%CI)= 2.50 (1.04-6.02)] and [OR (95%CI)= 0.31 (0.14-0.70)], respectively), whereas OT was associated also with PCs [OR (95%CI)= 1.60 (1.00-2.56)]. At the subsequent multinomial analysis grouping grade I-II and III-IV PCs, OT showed a significant association with grade III-IV [OR (95%CI)= 3.72 (1.37-10.12)]. Moreover, we observed a trend between pre-operative variables (age, BMI, percentage of positive cores) and low grade PCs and between operative variables (pelvic lymph node dissection, LPS) and higher grade PCs.

**CONCLUSIONS:** The rate of ICs and PCs in our retrospective cohort is similar to those reported in the literature. OT showed an association with ICs and PCs, particularly high grade PCs. The association with ICs might be explain by the time necessary to fix this ICs and possible sequelae in terms of PCs. Robotics seems to have a protective effect on ICs and we can speculate that this is related to its easier surgical interface. Trends toward minor (age, BMI, percentage of positive cores) and major (lymph node dissection and laparoscopy) complications should be investigated prospectively in a larger cohort.