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Introduction & Objectives: Laparoscopic approach has been established as a minimally invasive treatment modality for patients undergoing radical prostatectomy. In the last few years, 3D-vision systems have been introduced in order to provide better visual operating conditions. In our case series study, we examine the perioperative outcomes of PCa patients submitted to Laparoscopic 3D-vision radical prostatectomy (LRP) in our department and compare them with the literature.

Materials & Methods: During the period from January 2016 to June 2017 (18 months), 145 patients were submitted to 3D LRP for localized PCa treatment. Basic demographic data, pre-operative clinical data, surgical details, postoperative pathological data and short-term outcomes were documented. All patients were operated by two equally experienced Surgeons using the same technique, the same high-definition imaging equipment (Aesculap® EinsteinVision®, Aesculap AG, Tuttlingen, Germany) and the same instruments. LRP was carried out by extraperitoneal approach, nerve-preservation and pelvic lymph-node dissection (LND) was performed when indicated and the same urethral anastomotic technique. Two major systematic reviews/meta-analyses including 68 articles with relevant data were used for comparison (Huang, 2016 and De Carlo, 2014).

Results: 136 patients were finally included in the study. The mean operation time (OT) was 108±20.7 min and the median blood loss was 300 (range 20-1000) ml. OT and blood loss were significantly lower than those in the literature (236 min and 442 ml, respectively). No major postoperative complications occurred. Surgical margins were positive in 40 (29.4%) patients overall and dropped to 22.4% in patients with T2 disease, a result comparable with the literature. LND was performed in 71 (52.2%) patients and positive (N1 stage) was confirmed in 11 (15.5%) out of them. The median follow-up was 7 (range 1-18) months. Regarding additional treatment to LRP, 100 (73.5%) of the patients did not require any additional therapy in the short-term, while 21 (15.4%) were submitted to radiotherapy plus hormonotherapy, and 10 (7.4%) in hormonotherapy alone. Concerning functional results, early spontaneous potency was observed in 19 (14.0%) patients and erectile dysfunction was treated with oral medication in 6 (4.4%), intracavernous injections in 16 (11.8%), or prostaglandin E₁ (PGE₁) gel in 4 (2.9%). 61 (44.9%) patients remained impotent for the period of follow-up. The overall continence rate reached 86.7% at ≥3 months which is higher compared to the meta-analyses (63.8% weighted continence rate at 6 months).

Conclusions: Laparoscopic radical prostatectomy is an efficient minimally invasive surgical approach for the treatment of localized PCa. 3D Laparoscopic vision facilitates the surgical technique providing shorter operation time and less blood loss and comparable post-operative outcomes with the standard laparoscopic vision.