

SUMMARY:

Laparoscopic radical prostatectomy with and without ligation of the Santorini plexus - safety and functional results in annual follow-up.

The aim of the study was to retrospectively assess the functional and safety results of laparoscopic radical prostatectomy without ligation of the Santorini plexus in comparison to the classical method, in which the plexus is ligated.

The group in question consisted of a total of 415 patients who underwent laparoscopic radical prostatectomy due to prostate cancer in the cT1c-3bN0M0 stage in 2017. 205 patients were operated on with the classic technique with a Santorini plexus supplied by tapping at the Department of Urology and Oncology of the Pomeranian University of Urology in Szczecin (Center 1, PUM), and 210 were operated using an alternative technique, consisting in the complete abandonment ligation of the Santorini plexus at the Department of General and Oncological Urology, Collegium Medicum of the Nicolaus Copernicus University in Bydgoszcz (Center 2, CM UMK). The median age of the patients was 64.5 years, BMI 27.86 kg / m², PSA 12.03 ng / ml, prostate volume 43.3 ml. The study included patients with the pathological diagnosis Gleason 6-10, and the follow-up period was 12 months from the procedure.

The advancement of pT2 and pT3 of prostate cancer after surgery in the groups with and without ligation of the dorsal vein complex was related to 141 (68.8%) and 64 (31.2%), respectively, as well as 135 (64.2%) and 75 (35.8%)) men, of which positive surgical margins were found in 78 (38%) and 61 (29%) patients. The overall risk of a positive margin was at the borderline of statistical significance ($p = 0.052$), other differences were not significant ($p > 0.05$). Tumor involvement of the prostate apex was significantly more frequent in the population treated with the alternative method ($p < 0.001$) and among these patients the positive surgical margin of the apex was also significantly less ($p = 0.005$).

Procedures performed using the alternative method lasted an average of 98 minutes, which was 42 minutes shorter than in the case of patients operated on with the control method ($p < 0.001$). Postoperative complications, excluding urinary continence and potency,

were developed by 69 (33.7%) and 74 (35.2%) people from Center 1 and Center 2 ($p = 0.622$). Blood transfusions were required in 12 (5.9%) and 14 (6.7%) patients, respectively ($p = 0.724$). Urinary tract infection was significantly more frequent in the group of patients without ligation of Santorini plexus ($p = 0.015$), while the overall number of complications according to the Clavien-Dindo scale between the groups was comparable ($p = 0.620$).

In the analyzed population, urinary incontinence was achieved at 3, 6 and 12 months of observation in Center 1 and Center 2, respectively 69.3%, 80.5% and 84.4% of patients and 50.5%, 59.5% and 78.1 % of patients, and the difference for the 3rd and 6th months turned out to be statistically significant ($p < 0.001$). Among 345 preoperative sexually active patients, recovery of sexual potency was comparable between the groups at 12 months of follow up 24.5% and 23.7% respectively, and this difference was not statistically significant ($p = 0.850$).

In the entire study population, an increase in age by 1 year increased the probability of urinary incontinence by 4%, intraoperative blood loss of 100-200ml reduced the risk of urinary incontinence by 63% compared to people who lost 0-100ml. Tumor infiltration outside the organ (pT3) was associated with a 2.37-fold increase in the risk of urinary incontinence, and the use of radiotherapy to the prostate bed over a period of more than 6 months after surgery increased the likelihood of incontinence by 2.24 times.

In the entire study population BMI, prostate volume, hypertension, diabetes, atrial fibrillation, ischemic heart disease, asthma and COPD, sparing nerve bundles, extent of pelvic lymphadenectomy, tumor involvement of lymph nodes, decrease in hemoglobin, decrease in blood erythrocyte concentration and the amount of postoperative drainage from the drain turned out to be insignificant predictors of urinary continence ($p > 0.05$).

Elevation of PSA ≥ 0.2 ng / ml at the 3rd month of observation was found in 36 (8.7%) men, respectively 15 (7.3%) and 21 (10%) from Center 1 and Center 2 ($p > 0.332$). and undetectable PSA level < 0.1 ng / ml was achieved by a total of 362 (87.2%) men, 179 (87.3%) and 183 (87.1%), respectively ($p > 0.05$). Adjuvant treatment in the form of radiotherapy, radiohormone therapy or only androgen deprivation during one-year follow-up was performed in 43 (21%) and 47 (22.4%) patients with and without ligated of Santorini plexuses ($p > 0.05$).

