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Oncological and functional outcomes after radical prostatectomy in obese patients. Prognostic factors of survival

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Introduction & Objectives: Recent studies have demonstrated that obesity is associated with high probability of primary diagnosed prostate cancer (PC). Moreover, obesity could be associated with worse outcomes in patients (pts) with already verified PC and higher probability of more aggressive tumors in obese pts. The aim of the study was to assess results of radical prostatectomy (RPE) in obese pts.

Materials & Methods: Retrospective analysis of 2255 PC pts after RPE performed in one center was done. Mean age was 63.1±6.2 years; mean PSA: 15.4 ± 13.5 ng/mg; clinical stage T1a-T2a was in 527 (23.4%) pts, T2b – in 319 (14.1%), T2c – in 883 (39.2%), T3a – in 316 (14%) and T3b – in 210 (9.3%) pts. Biopsy Gleason score was ≤6 in 1242 (55.1%) pts, 7 (3+4) – in 455 (20.2%), 7 (4+3) – in 278 (12.3%) and 8-10 – in 280 (12.4%) pts. Mean percentage of positive biopsy cores (PPBC) was 47.8 ± 30.4%. Obesity (BMI≥30) was diagnosed in 590 (26.2%) pts. BMI<30 was in 1665 (73.8%) pts. In all pts RPE with extended pelvic lymph node dissection (PLND) was performed.

Results: Mean operation time in cohort of obese and not obese pts was 178 ± 43 min and 168±44 min, respectively (p < 0.001); mean blood loss was 490±230 ml and 370±250 ml, respectively (p<0.001). Mean number of LN removed in pts with BMI≥30 was 21 ± 11 (12-47) and in pts with BMI<30 was 22 ± 13 (11-57) (p=0.84). Complication rate was significantly higher in obese pts (p<0.05), nevertheless obesity was associated with significantly lower probability of formation of clinically significant lymphocytes after the surgery. In subgroup of obese pts clinically significant lymphatic cysts (need of puncture or draining) were observed in 97 (18%) pts and in pts with BMI<30 in 354 (23%), respectively (p<0.001). Lymph node metastases (LNM) were verified in 118 (20%) in obese pts and in 299 (17.9%) pts with BMI<30 (p<0.001). Positive surgical margin (PSM) was verified in 90 (15%) pts with BMI≥30 and in 165 (10%) in pts with BMI<30, respectively (p<0.01). Obesity was associated with significantly larger probability of Gleason 8-10 tumors, reveled during morphologic examination, compared with cohort of pts with BMI<30 (p=0.002). Moreover, obesity was associated with worse oncological outcome. During median FU time of 57 months biochemical recurrence (BR) was observed in 140 (23.7%) pts in BMI<30 cohort and in 340 (20.4%) obese pts (p<0.01). Thus, 5-year biochemical progression-free survival (PSA BPFS) in pts with BMI≥30 was 52.6±3.4% and in pts with BMI<30, 5-year PSA BPFS was 66.5±1.7% (p=0.0002). In cohort of obese pts initial PSA (p=0.04), PPBC (p=0.03) and NCCN grading group (p=0.0002) were independent preoperative predictors of outcome in multivariate Cox regression analysis.

Conclusions: RPE in obese pts is associated with prolonged operation time, enlarged blood loss and complication rate. Obesity was also associated with worse oncological outcome.