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Introduction & Objectives: Minimally invasive techniques of radical prostatectomy (RPE) are becoming increasingly common nowadays with laparoscopic (LRPE) and robot-assisted (RARPE) interventions with fascial structures reconstruction being possible. The prospective clinical study compares postoperative continence recovery according to the type of surgical operation.

Materials & Methods: The present study includes 100 patients selected and divided into 4 groups, each of 25 patients who underwent RPE: 1) LRPE without reconstruction; 2) LRPE with posterior or anterior+posterior reconstruction; 3) RARPE without reconstruction; 4) RARPE with posterior or anterior+posterior reconstruction. The interventions were performed by one surgical team in the period from 2016 to 2019. The criteria for effectiveness evaluation were the mean operation time, duration of bladder catheterization, rate of vesicourethral anastomosis failure and period of continence restoration. Continence recovery corresponded with the daily use of up to one safety pad and was evaluated the day after decatheterization, then – 1, 3, 6 and 12 months afterwards.

Results: The mean operation time (from the incision to wound suturing) was 75.31 ± 32.2 and 132.45 ± 19.3 minutes for LRPE and RARPE without reconstruction respectively (excluding the time spent on lymphadenectomy). Surgical procedures in groups 2 and 4 took 10-20 minutes more. The incidence of vesicourethral anastomosis failure decreased significantly in the groups with posterior and anterior+posterior reconstructions (23% vs 7%). Due to early catheter removal (the 4th postoperative day), the duration of bladder catheterization decreased in patients in group 4. In the second group, in comparison with the first one, the incidence of continence recovery increased after 3 months (73.2% vs. 60.6%), but after 6 months there was no significant difference. The frequency of continence recovery after 1 and 3 months increased in group 4, compared with the third one (75.6% vs 92.1%); no differences were observed after 6 months.

Conclusions: The most favorable method of RPE according to the postoperative continence recovery is a robot-assisted intervention with anterior + posterior reconstruction.