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ORIGINAL ARTICLE / ОРИГИНАЛНИ РАД

The first 10 years' experience in radical retropubic prostatectomy: complications, lower urinary tract symptoms, and quality of life – a single-center experience

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SUMMARY

Introduction/Objective This 10-year prospective study's primary objective was to evaluate the incidence of complications of radical retropubic prostatectomy (RRP). The secondary objective was to analyze how RRP affects lower urinary tract symptoms (LUTS) and quality of life (QoL) by using the International Prostate Symptom Score (IPSS).

Methods We analyzed 254 patients who underwent RRP in the period 2009–2018. All complications were graded according to the Clavien–Dindo classification. To assess urinary symptoms and the QoL, all the examinees filled out the IPSS and the International Prostate Symptom Score for QoL (IPSS QoL) questionnaires during preoperative preparation and three, six, and 12 months after surgery.

Results The incidence of complications Clavien–Dindo grade ≤ II and grade ≥ III were 26.4% and 16.5%, respectively. The mean overall IPSS for the entire group of patients after 12 months of follow-up was significantly different from the preoperative baseline value ($p < 0.001$). Patients with preoperative moderate (IPSS 8–19) and severe urinary symptoms (IPSS 20+) had a statistically significant reduction of urinary symptoms after RRP ($p < 0.001$). After 12 months, IPSS QoL was statistically significantly lower than the preoperative one ($p < 0.05$).

Conclusion For patients with clinically localized prostate cancer, RRP is a safe and effective treatment option. It is associated with a higher rate of complications from the Clavien–Dindo grade ≤ II group. RRP has clinically beneficial effects on LUTS in patients with moderate and severe urinary symptoms and the QoL related to LUTS.

Keywords: prostate cancer; radical prostatectomy; urination disorders; questionnaires

INTRODUCTION

Prostate cancer (PCa) is the most common tumor in men over 50 years of age [1]. In Western Europe and the USA, it is the second leading cause of cancer death [2, 3]. Among men in Serbia, PCa is by prevalence second only to lung cancer. The screening test with serum prostate-specific antigen (PSA) improves the diagnosis of PCa at organ-confined status [3, 4, 5]. Accordingly, this has led to an increased number of patients considered candidates for radical prostatectomy (RP). RP performed as an open, laparoscopic, or robot-assisted surgery remains the standard procedure for patients with localized PCa and life-expectancy of at least 10 years [3, 6, 7]. Despite the surgeons' growing experience, better knowledge of anatomy, and refinement of surgical techniques, most patients who undergo RP experience treatment-related side effects that can significantly impact their quality of life (QoL) [8]. This 10-year prospective study's primary objective was to evaluate the incidence of complications of radical retropubic prostatectomy (RRP). The secondary objective was to analyze how RRP affects lower urinary tract symptoms (LUTS) and the QoL by using International Prostate Symptom Score (IPSS).

METHODS

The study included 254 patients with histologically confirmed PCA in clinical T2 or lower disease stage, who underwent RRP at the Urology Clinic, Niš Clinical Center, 2009–2018. Preoperative baseline data included age, PSA, Gleason score, clinical stage, and the American Society of Anesthesiologists score. Five out of 10 urologists performed 88% of operations. The anatomical approach described by Walsh was used [9]. Pelvic lymph node (PLN) dissection was done in patients with serum PSA > 10 ng/ml and/or Gleason score ≥ 7. Preservation of the cavernous nerve was done by an individual

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surgeon's assessment based on clinical disease staging. Intraoperative and postoperative baseline data included average operative time, estimated blood loss, pelvic drainage, urinary catheterization time, duration of postoperative lymphorrhea, length of hospital stay, intraoperative and postoperative transfusion rate, operative specimen weight, pathological disease stage, presence of seminal vesicle invasion and PLN involvement. All complications were evaluated, and the definitions of complications were adapted from other RP reports and graded according to the Clavien–Dindo classification [5, 10]. The evaluation of the impact of RRP on LUTS and QoL was assessed by using IPSS and the International Prostate Symptom Score for Quality of Life (IPSS QoL). Voiding and storage symptom were analyzed independently. All the patients enrolled in the study filled out both questionnaires preoperatively and three, six, and 12 months after the surgery. Time from complete preoperative preparation to the operation itself was not longer than three months. The patients who received neoadjuvant or adjuvant therapy and had inadequate data or incomplete questionnaires were excluded from the study. Data are presented as mean value ± standard deviation or as median (25th–75th percentile). The general linear model – repeated measures was used to compare questionnaire scores measured at baseline and after three months, six months, and 12 months. Statistical procedures were performed using the R software (The R Project for Statistical Computing). The probability value $p < 0.05$ was considered statistically significant [11].

All procedures on human subjects were done in accord with the ethical standards of Helsinki Declaration and approved by the Faculty of Medicine and the University of Niš as a part of a doctoral dissertation investigations (Approval No. 04-825/12).

Table 1. Preoperative clinical and pathologic parameters

Characteristics	n	%
Age	62.7 ± 4	53–71
Clinical stage		
T1	9	3.6
T2	216	85
T3	29	11.4
Gleason score biopsy		
≤ 6	156	61.4
7	92	36.2
8	6	2.4
Baseline PSA (ng/ml)†	12.4 ± 6.1	0.6–33.2
ASA score		
0	24	9.4
1	21	8.3
2	190	74.8
3	19	7.5
Pathologic stage		
T0	2	0.8
T1	3	1.2
T2	161	63.3
T3	83	32.7
T4	5	2
Nodal status		
N0	160	63
N1–N2	12	4.7
Nx	82	32.3
Seminal vesicle invasion	55	21.7
Pathologic Gleason score		
≤ 6	125	49.2
7	101	39.8
≥ 8	28	11
Operative specimen weight (g)†	38.5 ± 13.1	15–90

ASA – American Society of Anesthesiologists; PSA – prostate-specific antigen;
†mean ± standard deviation, min-max;
data are presented as n or %;

RESULTS

Fourteen out of 268 patients who underwent RRP were excluded from the study. In 12 patients, preoperative urinary catheterization was performed because of urinary retention. Descriptive, clinical, and pathological parameters are presented in Table 1. Extended PLN dissection was performed in 37.8% and limited in 29.9% of the patients (Table 2). PLN involvement (N1–2) was present in 4.7%, seminal vesicle invasion in 21.7%. Other intraoperative and postoperative parameters in patients undergoing RRP are presented in Table 2. The average operation time was 170 minutes, and the average blood loss was 867 ml. Eighty-four patients received intraoperative or immediate postoperative blood transfusions. The average length of hospital stay was 10.5 days. The average catheterization time was 15 days. Fifteen patients were incontinent, and 218 patients did not use pads 12 months after the operation.

Postoperative complications that occurred within 60 days after the surgery were defined as early complications. Complications between 60 days and 12 months are defined as late complications. The overall complication rate (OCR) was 42.9% in 72 (28.4%) patients. Complications of RRP are presented in Table 3. Immediate surgical reintervention was done in five (2%) patients due to injuries to the rectum, ureter, urine leakage at the ureterovesical anastomosis, and bleeding. Most complications graded as Clavien–Dindo I (15.4%) and II (11.1%) did not require surgical reintervention. The most common complication in the Clavien–Dindo grade ≤ II group was urinary tract infection (UTI) (4.2%). The group of complications in Clavien-Dindo grade ≥ III comprised groups IIIa, IIIb, and IVa, and these were confirmed in 4.4%, 11.1%, and 1.2% of cases, respectively. Fifty percent of them were late postoperative complications [vesicourethral anastomosis stenoses (VUAS) and incontinence] which required surgical intervention in spinal or general endotracheal anesthesia. All the patients with VUAS had UTI. Symptomatic lymphoceles were confirmed in two (0.8%) patients and treated with percutaneous drainage in short-term intravenous anesthesia. Postoperative pulmonary embolism was encountered in two patients and myocardial infarction in one patient.

IPSS categories in the 12-months follow-up period are presented in Figure 1. Compared to the preoperative

Table 2. Intraoperative and postoperative parameters of patients who underwent radical retropubic prostatectomy

Parameters	n	%
Nerve sparing procedure		
Yes	69	27.2
No	185	72.8
Lymph node dissection	172	67.7
Extended	96	37.8
Limited	76	29.9
Not done	82	32.3
Operative time (min)†	170.8 ± 41.4	90–280
Estimated blood loss (ml)†	846.1 ± 564.9	50–2750
Blood transfusion – intraoperative (ml)	84	33.1
Length of hospital stay (d)†	10.4 ± 3.1	6–21
Catheter duration (d)†	14.6 ± 2.3	9–21
Pelvic drainage < 5 (d)	192	75.6
Prolonged pelvic drainage 5–10 d	52	20.5
Prolonged pelvic drainage >14 d	10	3.9
Positive urine culture	23	9.1
Incontinence within 6 months	66	26
Incontinence after 12 months	15	5.9
None pad per day	218	85.8
Patients with complications	72	28.4
Positive surgical margins**	44	28.7

Data are presented as n or %;
†mean ± standard deviation, min-max;
**status of surgical margins was available in 153/254 patients

Table 3. Complications of radical retropubic prostatectomy n = 72 (28.4%)

Variable	Clavien–Dindo grade	≤ II		≥ III	
		n	%	n	%
Perioperative and early postoperative within 60 days					
Rectal injury preoperatively	I	5	2		
Rectal injury postoperatively	IIIb			1	0.4
Distal ureteral injury	IIIb			2	0.8
Postoperative blood transfusion	II	8	3.2		
Postoperative bleeding	IIIb			1	0.4
Significant hematuria	II	5	2		
Obturator nerve injury	II	2	0.8		
Pulmonary embolism	IVa			2	0.8
Myocardial infarction	IVa			1	0.4
Wound infection	I	7	2.8		
Wound dehiscence	IIIa			3	1.2
Prolonged lymph secretion	I	9	3.9		
Urinary tract infection/epididymitis	II	13	4.2		
Anastomotic leakage	I	2	0.8		
Anastomotic leakage	IIIa			3	1.2
Anastomotic leakage	IIIb			1	0.4
Acute urinary retention	I	7	2.8		
Dislodgment of Foley catheter	IIIa			5	2
Suture of urinary catheter	I	5	2		
Infected lymphocele	IIIb			2	0.8
Asymptomatic lymphocele	I	4	1.6		
Late postoperative > 60 days					
Anastomotic stenosis	IIIb			17	6.7
Surgery for urinary incontinence	IIIb			4	1.6
Total number of complications	109	67	26.4	42	16.5

Data are presented as n or %

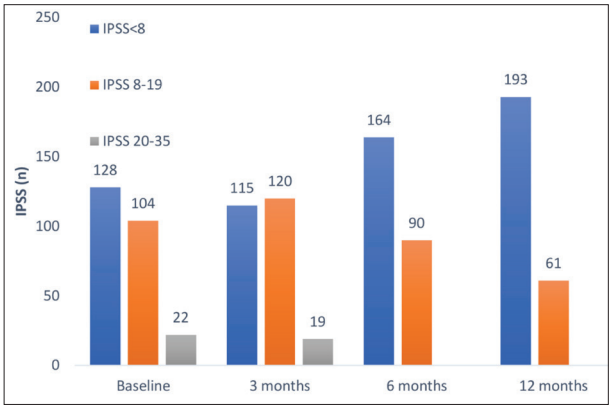

Figure 1. International Prostate Symptom Score (IPSS) categories over a 12-month follow-up period

period, after 12 months of follow-up, there were 65 patients more with mild (IPSS < 8), and 43 fewer with moderate symptoms (IPSS 8–19), while there were no patients with severe symptoms (IPSS 20+). The total IPSS score at baseline (mean ± SD) was 9.7 ± 4.32; at three months 10.69 ± 4.88; at six months 8.8 ± 3.11; and at 12 months 7.46 ± 1.85, with a statistically significant difference among the measurements ($p < 0.001$). IPSS voiding symptom score (IPSSv) at baseline (mean ± SD) was 4.57 ± 2.58; at three months it was 3.44 ± 3.21; at six months 2.68 ± 1.92; and at 12 months 1.96 ± 1.29, with a statistically significant difference among the measurements ($p < 0.001$). IPSS storage symptom score (IPSSs) at baseline (mean ± SD) was 5.13 ± 2.11; at three months 7.25 ± 2.07; at six months 6.12 ± 1.81; and at 12 months, 5.5 ± 1.48, with a statistically significant difference among the measurements ($p < 0.001$). All the mean changes in IPSSt, IPSSv, and IPSSs in the study population were significantly different among all measurement points (Table 4). In the subgroup IPSS < 8, all the mean changes in IPSSt were significantly different among all measurement points, particularly between baseline values and values after three months ($p < 0.001$). In the subgroups IPSS 8–19 and IPSS 20+, all the mean changes in IPSSt were statistically different between all the measurement points, particularly between baseline values and 12 months ($p < 0.001$). In the subgroup IPSS 20+, all the mean changes in IPSS, voiding, and storage were statistically different among all measurement points except for the mean change in storage in the first six months. All mean changes in IPSS QoL scores in the study population were statistically different among all the measurement points (Table 4). IPSS QoL scores were statistically significantly lower after 12 months compared to baseline values ($p < 0.05$). Graphical presentation of IPSS categories in the 12-month follow-up period is given in Figure 1.

Table 4. IPSSt, IPSSv, IPSSs, and IPSS QoL, at baseline, three months, six months, and 12 months following surgery

Parameters	Baseline values	Three months	Six months	12 months	p
IPSSt	9.70 ± 4.32[a,b,c]	10.69 ± 4.88[b,c]	8.80 ± 3.11[c]	7.46 ± 1.85	< 0.001
IPSS < 8	6.30 ± 0.7[a,b,c]	10.02 ± 5.13[b,c]	7.62 ± 2.39[c]	7.09 ± 1.26	< 0.001
IPSS 8-19	11.64 ± 1.69[a,b,c]	10.38 ± 4.19[b,c]	9.08 ± 2.69[c]	7.38 ± 1.72	< 0.001
IPSS 20+	20.27 ± 1.2[a,b,c]	16.00 ± 2.98[b,c]	14.36 ± 2.3[c]	10.00 ± 3.06	< 0.001
IPSSv	4.57 ± 2.58[a,b,c]	3.44 ± 3.21[b,c]	2.68 ± 1.92[c]	1.96 ± 1.29	< 0.001
IPSSs	5.13 ± 2.11[a,b,c]	7.25 ± 2.07[b,c]	6.12 ± 1.81[c]	5.50 ± 1.48	< 0.001
IPSS QoL	1.95 ± 1.12[a,b,c]	2.22 ± 1.23[b,c]	1.63 ± 1.05[c]	1.42 ± 0.98	< 0.001
IPSS QoL**	1.96 ± 1.1[a,b,c]	2.20 ± 1.2[b,c]	1.61 ± 1.01[c]	1.37 ± 0.92	< 0.001
IPSS QoL*	1.94 ± 1.14[a,b,c]	2.24 ± 1.26[b,c]	1.65 ± 1.09[c]	1.47 ± 1.06	< 0.001

IPSS – International Prostate Symptom Score; data are presented as mean ± SD; $p < 0.05$; [a]*vs.* three months; [b]*vs.* six months; [c]*vs.* 12 months; *positive margins; **negative margins

DISCUSSION

Our study results suggest that RRP is a therapeutically effective method with a few severe complications, which is in line with other recently published studies [3]. Comparing different surgical approaches, De Carlo et al. [3] have reported weighted mean estimated blood loss of 935 ml, intra- and postoperative transfusion rate of 19.63%, weighted mean operative time 179.03 minutes (105–253 minutes), length of hospital stay 7.87 days (3–16 days) and catheterization time of 12.85 days (1.23–16 days) in RRP series. In our study, the mean blood loss was less (846 ml) and mean operation time was shorter (170.87 minutes), which could be explained by the well-accomplished technique of vascular control during RRP as well as an adequate operation volume of most surgeons (≥ 25 per surgeon). Comparison of operative time and transfusion rate might be misleading due to variations in reporting operative time (depending on the inclusion of set up time and PLN dissection and learning curve phase) and different clinical practices among institutions [3, 12]. Compared to minimally invasive surgical approaches, the average blood loss in RRP is three times greater, and the percentage of administered blood transfusions is five times greater [12, 13]. A great variability in length of hospital stay (6–21 days) and catheterization time (9–21 days) in our study results from hospitalization of patients from other medical centers until the time for catheter removal. Such practice is present in European counties as well, where patients remain in hospital until the urinary catheter is removed, whereas in the USA, patients are usually discharged quickly after surgery [3].

Positive surgical margins (Table 2) are an essential predictor of biochemical recurrence and additional treatment after surgery [14]. In our series of patients, it was not always available, but the overall incidence of positive surgical margins was higher (28.7%) compared to other reported series of patients (15%) [5, 14]. Relatively high incidence of pT3 patients is undoubtedly responsible for it and documented surgeon experience [14]. There was no difference in IPSS QoL during the first three months between patients with positive and negative surgical margins like in another series [15]. However, a decrease in the IPSS QoL during the follow-up could be explained by radiotherapy applied as a secondary treatment.

In our study, the prevalence of complications and their distribution by Clavien–Dindo grades are in line with results in other published studies [5, 12]. Although the OCR was relatively high (42.9%), reinterventions were done in only five (2%) patients who were operated on. Carlsson et al. [12] reported a similar OCR of 44.6%, whereas reintervention was performed in 14 (2.8%) patients. Data from a recently published review that included 29 studies reported a weighted mean OCR of 23.2% (range 6–68%) in patients who underwent RRP [3].

The incidence of Clavien–Dindo grade ≤ 2 complications was significantly higher (25.4%) compared to Clavien–Dindo grade ≥ 3 complications (16.5%) in our study. The most prevalent complications in Clavien–Dindo grade ≤ 2 group were UTI and prolonged lymph secretion. Lenart et al. [16], Cheng et al. [5], and Wang et al. [17] also reported symptomatic UTI in 8.2%, 4.2%, and 1.7%, respectively. However, there is no literature about this complication as it was not analyzed as a separate parameter. Our opinion is that there is an association of this complication with a permanent urinary catheter. UTI was postoperatively confirmed in seven out of 12 patients who had permanent catheter preoperatively. Another possible UTI mechanism is the entry of particles containing bacteria during the operation's replacement of urinary catheters. In our study, 12 of 13 patients with VUAS had UTI. However, we did not analyze this association. Prolonged lymph secretion, as a typical complication of RP, is associated with PLN dissection [7]. In published studies, the prevalence of this complication in RRP ranges 1.1–6% [5, 18]. In our study, lymphocele was confirmed in six (2.4%) out of nine (3.6%) patients with prolonged lymph secretion. Based on recent data, PLN dissection during RP is associated with a considerably increased risk for lymphocele formation compared to RP alone [19]. Our complication analysis revealed another complication that resolved spontaneously and had not been described in the literature. We defined it as urinary catheter suture and classified it among Clavien–Dindo grade I events. After emptying the balloon, a surgically placed urinary catheter could not be removed even with greater tension, but it spontaneously came off in the following 48 hours. The possible cause of this complication was that the catheter crossed the placed sutures at the anastomosis before tying, or that the catheter diameter at the site of the emptied balloon was greater than the diameter of the vesicoureteral anastomosis.

The most common complication in Clavien–Dindo grade ≥ 3 in our study was VUAS. The prevalence of this complication after RRP in the literature varies 0.5–32%, whereas we reported VUAS in 6.7%. Although we did not analyze the risk factors for VUAS, our opinion is that there is an association of this event with UTI as we confirmed symptomatic UTI in 12 (4.8%) out of 17 (6.7%) patients [7, 12, 17]. Whether UTI is the consequence or one of the causes of VUAS remains the topic for future researches.

Twelve months following RRP, there were 14.2% incontinent patients (one or more pads). The prevalence of this complication in the literature ranges 6.3–29.3% [3]. Although it is a significant complication, we reported only 1.6% of men who underwent surgical management of this complication. A similar result (2.2%) was reported by Carlsson et al. [12] as well.

The effect of RRP on LUTS in our study was reported for the entire group of patients. Only men with symptoms of IPSS ≥ 8 can significantly benefit because of symptom improvement. Slova and Lepor [20] analyzed the results of IPSSt, IPSSv, and IPSSs in 453 patients divided into two groups (IPSS < 8 and IPSS ≥ 8) 12 and 48 months after RRP. They did not report a statistically significant difference in mean IPSSt score after 12 months, but they reported a statistically significant reduction of mean IPSSv score. In contrast to the results of Slova and Lepor [20], our results demonstrated a statistically significant reduction in mean overall IPSSt after 12 months, which could be explained by greater baseline mean IPSSt (9.7 *vs.* 6.9), as well as by greater baseline number of patients with IPSS ≥ 8 in our study.

They also reported a significant difference in mean IPSSt and IPSSv for the entire group between baseline values and values after 48 months. The improvement of mean IPSSt between the baseline and after 48 months was attributed primarily to the reduction of mean IPSSv in the first 12 months and thr reduction of mean IPSSs in the period 12–48 months after the operation [20]. Our study results showed a statistically significant reduction of mean IPSSv and IPSSt six and 12 months after RRP compared to the baseline values, suggesting the role of IPSSv in the improvement of mean IPSSt. On the other hand, we could not estimate whether the results of IPSSs had a positive or negative impact on IPSSt after 12 months. The mean values of IPSSs at baseline and after 12 months were almost equal (5.1 *vs.* 5.5), and similar results for the same time interval were reported by Slova and Lepor [20] (4.2 *vs.* 4.5).

After 12 months, significant LUTS improvement was observed in subgroups IPSS 8–19 and IPSS 20+, since there was a statistically significant reduction by 4.3 and 10.3 symptom units compared to baseline values. Other studies have also reported LUTS improvement after RRP in men with IPSS8 ≥ 8 [20, 21]. Bayoud et al. [22] analyzed RP's impact on LUTS in 804 patients and reported a significant increase of mean IPSSt after one and three months (11.1 ± 7.1, 7.6 ± 6.1) compared to the baseline value (5.5 ± 6.6). There was no statistically significant difference between mean baseline value and after six, 12, and 24 months. Our study baseline means IPSSt was 9.7 ± 4.3, and after three months, IPSSt increased 10.6 ± 4.8 with a tendency of statistically significant decrease after six and 12 months (7.4 ± 1.8). This difference in decreasing tendency of mean IPSSt can be explained by very high baseline IPSSt compared to the observed study and by greater number of patients with IPSS ≥ 8 in our study (49.6% *vs.* 34.5%). The authors also demonstrated a downward trend in the number of patients in IPSS > 8 subgroup as follows: 42.4%, 32.9%, 21.7%, and 17% at three, six, 12, and 24 months, respectively [22], which was also confirmed in our study: 54.8%, 35.4% and 24.1% at three, six, and 12 months, respectively.

Numerous studies have demonstrated a beneficial role of RRP on LUTS. Papadopoulos et al. [23] reported a significant improvement of LUTS in 240 patients undergoing RRP. They studied IPSS and maximum flow rate (Q_{max}) before and after RRP. The percentage of patients with Q_{max} ≤10 ml/s was 41.3% before RRP, and during the follow-up of 12 months, Q_{max} increased from a median of 12 ml/s initially to 21 ml/s. In patients with Q_{max} of ≥ 10 ml/s there was no significant difference. They also reported significant IPSSt reduction in the group of patients with moderate and severe symptoms [23].

Analyzing LUTS in our study, we noticed a very slow decrease of mean IPSSt values in the IPSS20+ group during 12 months. This could be explained by the presence of postoperative incontinence in 36 (14.2%) patients postoperatively, which we did not analyze. Several authors have studied the negative impact of RRP on LUTS. Nocturia, frequent urination and incontinence occurring *de novo* in 2–77% of patients after RP with up to 50% recovery are dysfunctional disorders that can be associated with detrusor muscle overactivity, bladder compliance disorder, and detrusor contractility impairment [21, 24, 25]. LUTS could be explained as a consequence of pelvic plexus injury due to surgical dissection. Nerve injury of neurovascular bundles is responsible for postoperative continence impairment [25, 26]. The bladder filling and voiding phase can thus be disturbed since damaged bladder function is usually associated with sphincter weakness [25].

Our study demonstrated a significant improvement of QoL IPPS after RRP at the end of follow-up compared to the preoperative period (1.9 ± 1.1 *vs.* 1.4 ± 0.9). Therefore, it was a positive impact of RRP on QoL. Changes of mean values of IPPS QoL directly correlated with improvement and deterioration trends of LUTS and IPSSt following RRP. A positive impact of RRP on LUTS and QoL was reported as well by Mastubara et al. [24], using IPSS and QoL IPSS in 117 patients three, six, and 12 months after RRP. They reported a significant reduction of IPSS and QoL IPSS especially in patients with IPSS ≥ 8. Similar results were reported in the study focusing on LUTS and IPPS LUTS and IPPS QoL improvement in patients after robot-assisted RP [27]. Frequent urination and nocturia significantly impacted QoL IPSS in patients who did not have this symptom before RRP [21, 24, 27]. Moreover, similar results were presented for QoL IPSS regardless of the surgical approach [22, 27, 28].

Our study has several limitations. The assessment of impact of RRP on LUTS is subjective. It is based on the estimation of urinary symptoms by using IPSS questionnaire.

The study that analyzed flow rate and IPSS showed statistically significant improvement in Q_{max} (21 ml/min) and decrease in IPSS score 12 months following RRP only in patients with preoperative Q_{max} ≤ 10 ml/s and IPSS ≥ 8 [23]. We did not perform urodynamic studies, but our results showed a statistically significant reduction of IPSS score 12 months after RRP in groups of patients with

preoperative IPSS ≥ 8. Furthermore, we should be cautious regarding the uniformity of preoperative prostate biopsy and histopathology findings obtained not from one center but from some general hospitals, which presumably involve individual approaches despite a generally adopted doctrine. A single urologist did not perform the operations, and differences related to surgical skills and experience may lead to confusion when analyzing complications.

CONCLUSION

For patients with clinically localized PCa, RRP is safe and effective treatment option. It is associated with a higher rate of complications from the Clavien–Dindo grade ≤ II group, which does not require invasive surgical management. RRP has clinically beneficial effects on LUTS in patients with moderate and severe urinary symptoms and QoL related to LUTS.

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Прво десетогодишње искуство у радикалној ретропубичној простатектомији: компликације, уринарни симптоми и квалитет живота – искуство једног центра

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САЖЕТАК

Увод/Циљ Примарни циљ ове десетогодишње проспективне студије био је да се прикаже инциденца компликација радикалне ретропубичне простатектомије (РРП). Секундарни циљ је био да се прикаже утицај РРП на симптоме доњег уринарног тракта и квалитет живота на основу интернационалног скора симптома простате (*IPSS*).

Методе Анализирана су 254 болесника којима је урађена РРП у периоду између 2009. и 2018. године. Све верификоване компликације градиране су према класификацији Клавијен–Диндо. Процена уринарних симптома и квалитета живота свих испитаника је урађена на основу упитника *IPSS* и интернационалног скора симптома простате за квалитет живота (*IPSS QoL*) у току преоперативне припреме и 3, 6 и 12 месеци после операције.

Резултати Компликације градуса Клавијен–Диндо ≤ II забележене су у 26,4%, а Клавијен–Диндо ≥ III у 16,5% случајева. Средња вредност укупног *IPSS* целе групе испитаника након 12 месеци праћења била је статистички значајно мања ($p < 0,001$) у односу на преоперативну базичну вредност. Статистички значајно смањење уринарних симптома након операције ($p < 0,001$) забележено је код болесника са преоперативно умереним (*IPSS* 8–19) и јако израженим уринарним симптомима (*IPSS* 20+). У односу на преоперативну, средња вредност *IPSS QoL* након 12 месеци је била статистички значајно мања ($p < 0,05$), а квалитет живота бољи.

Закључак За болеснике са клинички локализованим карциномом простате, РРП је ефикасна опција лечења и повезана је са вишом стопом компликација из групе Клавијен–Диндо ≤ II. Код болесника са преоперативно умереним или јако израженим уринарним симптомима, РРП значајно доприноси њиховом смањењу и побољшава квалитет живота као последицу уринарних симптома.

Кључне речи: карцином простате; радикална простатектомија; уринарне тегобе; упитници