

Laparoscopic Radical Prostatectomy in Albania: Initial Experience in 25 Patients

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Received 10/April/ 2018 Accepted 30/June/ 2018 / Published online: 20 July 2018

<https://doi.org/10.32391/ajtes.v2i2.4>

Abstract

Background: Laparoscopic or robotic assisted prostatectomy has become common world wide. However, to our knowledge, laparoscopic radical prostatectomy has not been reported in Albania.

Objective: To analyze the early perioperative and oncologic results obtained with the extraperitoneal laparoscopic prostatectomy (ELRP).

Patients and Method: A retrospective study of all the patients operated at Salus Hospital Tirana, Albania. All data were collected and evaluated retrospectively on the basis of thorough clinical and pathological examination. For data management and statistical analysis, all variables pre-, intra- and perioperative data were collected in a spreadsheet.

Results: In the 4-year period (outline the period), 25 patients underwent the ELRP procedure. The average age of patients was 65 year-old and the PSA of 17.5 ng/dl. The total surgery time was 168 minutes on average. Only one patient was transfused after surgery, and limfocele was present in 2 patients. No other complications occurred.

Pathological examination revealed pT2 and pT3 cancers in 72% (18/25) and 25% (6/25) of patients, respectively. One patient had regional lymph nodes infiltration. The incidence of positive surgical margins and biochemical relapse rate was 16 % (4/25) and 32 % (8/25), respectively.

Conclusion: The ELRP technique is safe and effective procedure in the treatment of prostate cancer, with low morbidity.

Keywords: Laparoscopy; prostate cancer; radical prostatectomy

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Introduction

Schuessler *et al.* (1) in 1992 introduced the laparoscopic approach for surgical treatment of prostate cancer, and Guillonnet and Vallancien (2) in 1999 standardized the technique, making it feasible and reproducible. Since then, the use of LRP has widely spread in throughout the world and, in some center has completely replaced the open prostatectomy. Many studies in the literature confirm the maturity of the laparoscopic technique: the results of oncological and functional outcomes are similar to those of traditional surgery, with all the advantages of minimal invasiveness. The Urological Department of Salus Hospital Tirana, Albania first carried out a laparoscopic radical prostatectomy (LRP) in 2013. In the present study, we report our results after 4 years of procedures, analyzing in particular the oncological and functional aspects.

Patients and Methods

Patients. Between September 2013 and December 2017, 25 patients with prostate cancer, underwent extraperitoneal (Figure 1) LRP at our Center.

All procedures were performed by three surgeons. Qualitative and quantitative data were assessed and analyzed.

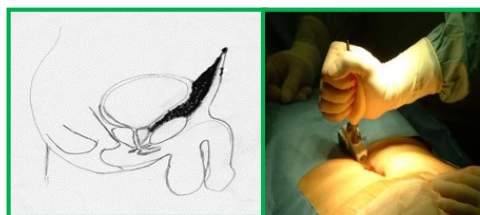


Figure 1

Preoperative data are summarized in Table 1.

Preoperative data	
Number of patients	25
Age (years) (median range)	65 (57 - 76)
PSAng/mL (median, range)	17,5 (1 -170)
Follow up months (median, range)	28 (2 - 50)

Our criteria for performing a nerve-sparing procedure were: age and preoperative erectile function, absence of unilateral palpable nodule or involvement of the prostatic capsule at imaging, ipsilateral Gleason score $\leq 3+4$, Prostate Specific Antigen (PSA) <10 ng/ml.

At our Clinic, the staging lymph node dissection is done to all the patients.

Pathological examination. All prostate specimens were analyzed by a dedicated pathologist who reported the following features: Gleason score, [pre-International Society of Urological Pathology (ISUP) 2005 (3)], (Table 2) pathological stage, seminal vesicle invasion, extracapsular extension (defined as the presence of neoplastic cells into adipose tissue), surgical margin status (cancer at the margin marked with ink) and lymph node invasion.

Follow-up: recovery of continence, potency, cancer control. Patients were discharged with a program of follow-up visits at 1, 3, 6 and 12 months. The recovery of urinary continence was evaluated on the basis of the number of pads/day.

Clinical Gleason Score and Clinical Stage	Nr (%)
Clinical Gleason score	
< 6	15 (60)
3+4	4 (16)
4+3	3 (12)
8-10	2 (8)
Clinical Stage	
T1a, b	4 (16)
T1c	21 (84)
cT2	0
cT3	0

Table 2

Patients free of pads were considered complete continent. The occasional loss of urine (one minipad per day) was classified as minimal stress incontinence. The use of two or more pads indicated moderate-to-severe incontinence. Good erectile function was defined as the ability to achieve an erection sufficient for penetration with or without the use of inhibitors of phosphodiesterase type 5 (PDE-5). Patients who reported erections only with intra-cavernous injection or vacuum devices were considered impotent. Biochemical relapse (BCR) was defined as a PSA value greater than 0.2 ng/ml, increasing from previous values.

Data collection and statistical methodology.

All data were collected and evaluated retrospectively on the basis of thorough

clinical and pathological examination. For data management and statistical analysis, all variables pre-, intra- and perioperative data were collected in a spreadsheet (Table 3)

Perioperative data	
Operative time min (range)	168 (110-260)
Transfusion rate	1 (4%)
Conversion rate	0
Median cateterizatin time (range) days	9,8 (6-15)
Mean hospital stay (range) days	6,4 (3-12)
Lymph node metastasis	1 (4%)

Table 3

Results

Pre- and perioperative clinical data.

Most patients had a clinical Gleason score ≤ 6 (60 %), while high-grade (4-6) disease accounting for only 8 % of cases. At the time of surgery, all the 25 patients (100 %) had clinically-localized disease (T1-T2)

Pathological Stage	nr	Positive Margins R+ (%)	Clinical Gleason score	N (%)
T1a, b	0	0	< 6	13 (52)
T1c	1	0	3+4	9 (36)
cT2	18	2 (8)	4+3	1 (4)
cT3	6	2 (8)	8-10	2 (8)
		Total 4 (16%)		

Table 4

An extraperitoneal approach was performed in all the patients.

of the patients needed intensive care recovery after surgery.

Pathological outcome and oncological follow-up. Pathological characteristics are summarized in Table 4.

The follow-up ranged from 2 to 50 months (median= 28 months). The overall BCR rate was 32% (8/25) (Table 5).

Biochemical Stage and Gleason Score	Relapse.	tot 8 (32%)
Pathological stage (nr)		Pathological Gleason Score
pT2 (3)		< 6 (1)
pT3a (2)		3+4 (4)
pT3b (3)		4+3 (1)
		8-10 (2)

Table 5

None of the patients developed bone metastases or died from prostate cancer disease or other diseases.

Functional outcome.

Urinary continence: The rate of minimal stress incontinence is 40% (10/25) and no one has moderate-to-severe incontinence.

Erectile function: We have no data about erectile function.

Complications. Overall, we recorded 2 patients complicated by lymphocele in 25 LRPs (8%). No one needed re-operation as both were absorbed spontaneously. None

Discussion

Oncological outcome. The cornerstones that have guided the development of LRP are maintaining quality of life, good oncological control, low morbidity, and the benefits of a minimally, invasive approach. A magnified view and the consequent better appreciation of the anatomical structures are closely linked to the achievement of these goals. Among them, the primary objective is to control cancer. Experience with the Heilbronn technique on 500 patients led to an overall positive margin rate of 19% (7.4% and 31.8% in pT2 and pT3 cases, respectively) (4). The experience on 1000 patients at the Charité Hospital in Berlin was as follows: 14.8% in pT2 and 54.4% in pT3 cases (5). In a series of 1,300 patients, the University of Leipzig reported a positive margin rate of 9.8% in pT2 and 34.3% in pT3 cases (6). Overall, considering the data reported in the most important series of LRP, the rate of positive surgical margins in LRP ranges from 11% to 30% (7).

In our study, positive surgical margins were identified in 16% of patients (4/25), in particular, in 8 % of pT2 and in 8 % of pT3 cases.

Regarding the evaluation of biochemical progression, different series use different PSA cut-offs in the definition of relapse, which vary from 0.1 to 0.4 ng/ml. Recently Hruza *et al.* published long-term oncological

results: the BCR-free survival rate 10 years after LRP was 80.2% in pT2, 47.4% in pT3a and 49.8% in pT3b/pT4 cases, confirming a better prognosis in patients with organ-confined disease ($p < 0.001$) (8). The rate of clinical progression-free survival at 10 years were: 97.2% in pT2, 84.4% in pT3a and 78.1% in pT3b/pT4 cases, and estimates of cancer-specific survival were 100%, 97.3% and 90.6%, respectively.

In our series, the BCR-free survival at 3 years is 68%,

The major series report 94.4% of BCR-free survival at 3 years from LRP.

Functional outcome. Functional results (urinary continence and erectile function) are becoming increasingly important for many patients. One of the main advantages of a minimally-invasive approach is the control of bleeding. The magnified view and better hemostasis allow for accurate identification of the different anatomical and functional structures and, accordingly, a more respectful surgery.

The main problem, which can make any objective comparative analysis between the different series impossible, is the lack of uniformity in defining, evaluating and reporting functional outcomes after radical prostatectomy. This usually leads to a great variability in the results of the different published series.

In our experience, at a timepoint of at least 12 months after surgery, 15/25 patients (60 %) were completely continent, 10/25 (40%) reported minimal stress incontinence (one mini pad), no patients needed more than one pad.

Similarly, the erectile function recovery rate varies significantly in different reports as there is no consensus regarding the definition, the use of different data collection methods and the use of drugs for the treatment of impotence.

In literature, important prognostic factors for predicting a good recovery of erectile function are: patient's age, preoperative function, nerve-sparing technique, and duration of follow-up (9). The majority of series report data on small groups of patients, usually treated after the surgical technique was well-acquired (10).

Stolzenburg *et al.*, using the IIEF, reported their experience of 700 extra-peritoneal LRPs: follow-up was 6 months and a nerve-sparing technique was performed in 185 (26.4%) patients, potent before surgery, unilaterally in 114 patients (16.2%) and bilaterally in 71 (10.1%) (11). At 6 months, 8 out of 66 men with unilateral technique (12.1%) and 16 of 34 with bilateral sparing (47.1%) had erections sufficient for intercourse with or without the help of PDE5 inhibitors. Rassweiler *et al.* reported the results of their first 180 LRP in 2003: 10 patients were treated with nerve-sparing technique (two bilateral and eight unilateral). Four patients had erections sufficient with sildenafil (12). The Montsouris group reported functional data of 47 consecutive patients under the age of 70 years, potent before surgery and treated with bilateral nerve-sparing LRP: 31 (66%) of those were able to have intercourse with or without PDE5 (13).

In our series, we have no certain data on potency. This is due to the fact that our patents do not refere during the follow-up

visits about erectile function as they retain as primary end-point the oncological safety, secondly the preservation of urinary continence, and the erectile function not important. However we do not have patients who use intra-cavernous injections or vacuum devices.

Perioperative outcome. In literature, the only proven advantages of LRP over the open technique are reduced blood loss, transfusion rates, hospital stay, postoperative pain, and duration of catheterization (14). The average blood loss reported after LRP ranges between 200 and 390 ml. The Montsouris group reported an average blood loss of 380 ml and a transfusion rate of 4.9%. In our experience we transfused only one patient over 25 operated.

The data on the length of hospital stay are extremely variable and must be interpreted in the light of the economic differences of health systems in Europe and the USA. In the USA, the patient is discharged very quickly, in 90% of cases within the second day (15). The main non-comparative studies indicate a range of hospitalization between 2 and 10 days, while the duration of catheterization is 7-10 days. Several reference Centers prefer to remove the catheter around the sixth to seventh postoperative day. At our Clinic, the average duration of catheterization was 9.8 days. We remove the catheter after a retrograde cystography.

Conclusion

Four years after the first LRP performed at our Clinic, the first series reported in

Albania, we can state that Laparoscopic radical prostatectomy is a safe and effective procedure in the treatment of prostate cancer, with low morbidity. We do not perform open surgery for prostate cancer, and we can say that the "gold standard" in our hand is Laparoscopic radical prostatectomy for prostate cancer. In our experience, the benefits are all related to the less invasive approach: reduced hospital stay, blood loss and pain, with improved recovery and cosmesis. The major difficulty is overcoming a learning curve that may seem prohibitive. However, with increasing experience and thanks to technological advances, the true potential of laparoscopy is gradually emerging.

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