SC21 Is Greenlight laser photoselective vaporization of the prostate a safe technique? Results from a wide monocentric series complications analysis, with a focus on postoperative fever and sepsis

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Aim of the study: GreenLight laser Photoselective Vaporization of the Prostate (PVP) is an effective surgical treatment for Benign Prostatic Hyperplasia (BPH). Moreover, its high coagulative power makes GreenLight reliable in high-risk patients (pts). Despite this, post – operative complications still represent a source of concern when surgery is performed in the most fragile pts. The aim of our study was to retrospectively review a large cohort of pts underwent GreenLight PVP and perform a complications analysis, with a focus on post – operative fever and sepsis.
Materials and methods: From 01/2015 to 12/2017, 288 PVPs were performed in a single centre in Turin (Città della Salute e della Scienza, ospedale Molinette). A complete retrospective review of clinical, surgical and follow – up data was carried out for all pts, focusing on post – operative complications. All pts were treated under spinal anesthesia, with an XPS 180 Watt GreenLight laser. A pre – operative urine culture was collected in all cases. When positive, antibiogram based, antibiotic therapy was prescribed before the intervention. Moreover, all pts received antibiotic prophylaxis at the time of surgery. We divided post – operative complications in: immediate, if they occurred in the first 24 hours after the intervention, or late, if their onset took place from the 2nd to the 90th postoperative day. We graded complications' severity according to the Clavien – Dindo classification. Subsequently, an analysis of predictors for both immediate and late complications was carried out. Statistics: univariate and multivariate logistic regression. Software: STATA.

Table 1: baseline characteristics of included patients.

Age, median (IQR)	72 (67–77)
Smoking (%)	30 (10,4)
Diabetes (%)	46 (15,9)
Hypertension (%)	163 (56,5)
Previous cardiological disease (%)	138 (47,9)
IRC (%)	13 (4,5)
Antiplatelet/anticoagulant therapy (%)	149 (51,7)
CV before surgery (%)	119 (41,3)

Table 2: immediate and late complications divided according to their type. Immediate complications: onset within 24 hours from the intervention. Late complications: onset within 3 months from the intervention.

Complication type	Immediate, n	Late, n
Acute urinary retention	6	24
Fever	13	11
Sepsis/septic shock	1	1
Hematuria	13	42
Cardiological complication	3	2
Urethral stenosis	-	4

Results: Patients' median (IQR) age was 72 (67–77) years. Baseline characteristics of the sample are described in Table 1. Remarkably, 119 (41,3%) pts were indwelling catheter carriers. An immediate complication occurred in 35 (12.2%) pts. According to the Clavien – Dindo classification, immediate complications were distributed as follows: 20 (57.1%) grade 1; 11 (31.4%) grade 2; 3 (8.6%) grade 3; 0 (0%) grade 4; 1 (2.9%) grade 5. An immediate fever was reported in 13 pts (37.1%). Moreover, we registered one case of severe, urinary septic shock which hesitated in patient's death. Late complications occurred in 77 (26.7%) pts: 44 (57.1%) grade 1; 23 (29.9%) grade 2; 10 (13%) grade 3; 0 (0%) grade 4; 0 (0%) grade 5. The multivariate analysis failed to identify general predictors of immediate or late complications. On the other hand, it revealed the indwelling catheter as a predictor of immediate postoperative fever, when this was analysed separately (OR 4.18; 95% IC 1.09–15.96; p = 0.036; accuracy 74.2%).
Discussion: GreenLight PVP can be considered a safe treatment for BPH, as underlined by the limited incidence and the usually low severity of its postoperative complications. Among these, anyway, urinary infections still represent a critical issue, due to their potential risk of progression to a severe and life – threatening disease.

SC22 Comparison between Open, Laparoscopic vs Robotic simple prostatectomy in a real-life settings: Analysis of trifecta outcomes

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Aim of the study: In the past years, minimally invasive surgical techniques for the treatment fo benign prostatic hyperplasia have been introduced. Open prostatectomy (OP) is still the most effective treatment for BPH, however it is as well the most invasive. To overcome the limitations of OP, robotic/laparoscopic simple prostatectomy has been recently inroduced. Aim of our study is to analyse outcomes and safety of open, laparoscopic and robotic simple prostatectomy.
Materials and methods: A consecutive series of men with lower urinary tract symptoms and large prostates (>80 cc) undergoing laparoscopic (LSP), robotic (RASP) or open simple prostatectomy (OSP) were enrolled between January and Semptember 2018 in three centers.Outcomes were evaluated considering the trifecta favourable outcome which was defined as reported in the literature as a combination of the following items: (1) no perioperative complications, (2) postoperative IPSS <8, and postoperative Qmax >15 ml/s. Complications were evaluated according to the modified Clavien classification system. Univariate and multivariate binary logistic regression was performed to identify predictors of a positive trifecta outcome. Predictive accuracy was assessed with L-ROC.
Results: Overall 159 patients were prospectively enrolled (32 Robotic, 66 Laparoscopic, 61 open). Preoperative characteristics are described in table 1. IPSS, Qmax significantly improved in all the three groups (table 1) when compared to baseline (p < 0.001). The overall complication rate was 10/61 (16 %)for OSP, 6/66 (9%) for LSP and 3/32 (9%) for RSP, however most of the complications were low grade complications according to modified Claviend-dindo classification (Grade ≤2). Overall, 51/66(77%) of the patients presented a positive trifecta outcome after LSP, 24/32 (75%) after a RASP and 49/61 (80%) after OSP; p = 0.517. On multivariate analysis, adjusted for ASA score, only Age (OR: 0.88; CI:0.79–0.97, p = 0.014), and preoperative symptoms (OR:0.86, CI:0,75–0.98, p = 0.028) were independent predictors of positive trifecta outcome. The multivariable model has a predictive accuracy of 0.84.

Table 1: Preoperative characteristics and outcomes of the three groups

	OSP	LSP	RSP	p^1	p^2	p^3
Age (years)	70 (65/76)	68 (63/73)	67 (63/72)	0,203	0,471	0,117
Preop PSA (ng/ml)	8 (5/14)	4 (3/8)	6 (4/8)	0,001	0,021	0,197
Prostate Volume (cc)	104 (91/123)	120 (92/140)	101 (85/118)	0,053	0,254	0,024
Preop IPSS	18 (14/18)	20 (18/22)	33 (27/33)	0,020	0,001	0,001
Preop Qmax ml/s	7 (5/10)	9 (6/12)	8 (7/8)	0,186	0,073	0,833
Postop Qmax ml/s	20 (18/28)	24 (19/31)	23 (21/27)	0,220	0,651	0,170
Postop IPSS	5 (3/6)	3 (2/6)	2 (1/3)	0,102	0,026	0,145
Positive Flow Outcome	59/61:96%	58/66:88%	32/32:100%	0,065	0,040	0,300
Positive Symptom Outcome	60/61: 98%	63/66: 95%	26/32: 81%	0,092	0,022	0,001
No complications	51/61: 83%	60/66: 91%	30/32: 93%	0,215	0,232	0,166
Trifecta	49/61: 80%	51/66:77%	24/32:75%	0,176	0,803	0,552

Data are presented as median (Interquartile range); Mann Whitney test: p^1OSP vs LSP, p^2 OSP vs RSP, p^3 LSP vs RSP

Discussion: Simple prostatectomy represents a safe and effective procedure in the treatment of large adenomas. Although RCTs are needed before reaching definitive conclusions, Laparoscopic and robotic surgical approach seems to be less invasive with similar trifecta outcomes when compared to open procedures.

SC23 Is prostate artery embolization (PAE) the future for the treatment of lower urinary tract symptoms secondary to benign prostatic hypertrophy?

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Aim of the study: Several medical, mini-invasive, endoscopic or surgical options are now available for LUTS BPH-related. Among these, prostatic artery embolization (PAE) is an endovascular approach that is gaining popularity thanks to some advantages (performance under local anesthesia, fast patient discharge, no pausing of anticoagulant drugs, ejaculation maintenance). We have analyzed the results one of the largest single Centre series in the world, achieved from patients treated in our hospital with PAE.
Materials and methods: Prospective study (November 2013–April 2018). All patients had a mpMRI (or CT scan) study and a multidisciplinary team assessment to confirm indication. Inclusion criteria: patients with special risks regarding surgery/anesthesia considered unfit for surgery; patients with indwelling bladder catheter (IBC); patients refractory with BPH medication; sexually active men (keen to avoid risk of retrograde ejaculation); patients with recurrent bleeding caused by BPH. PAE is performed using hydrophillic microcatheters and polyvinyl alcohol particles.
Results: 278 patients were treated, 118(42.4%) had an IBC. Median age was 73(53–93), and median Charlson CI was 5,09(2–14). Mean operation time and mean dose were 140,58 min(Stnd Dev: 39,5) and 717,4(Stnd Dev: 379,8) Gycm2, respectively. PAE was technically successful(bilateral) in 192(81,8%) patients; PAE was not possible in 5(2.1%) because of vascular issues. All patients were discharged the day after the procedure. Mean follow up was 19(range 6–54) months. No intra or peri-opertative time complications occurred. Among all patients, 197(70.8%) complained urethral burning in the first 48 hours after the procedure, 2(0.7%) rectal discomfort. Among no IBC patients, 4(1.4%) of them reported emospermia, spontaneously resolved after 2 months; no one reported erectile dysfunction; 82 (29.5%) had urgency e frequency for 10 days. Considering IBC patients, complete follow-up was achieved for 88(31.6%); 15 days after PAE, catheter was successfully removed in 67(76.1%); 12(4.3%) had UTI in the first month after catheter removal. A significant improvement in the observed endpoints compared to the baseline values was seen: the IPSS improved by –7.5 points, the QoL score (assessed with a visual scale) by –3.1 points, the maximum urine flow (Qmax) by 5.3 ml/s, postvoid residual volume by –66.9 ml and the PSA value by – 2.35 ng/ml.
Discussion: PAE is an interesting endovascular procedure generally performed by interventional radiologist; is mandatory that urologists select and follow the patients before and after procedure. According to our experience, PAE results feasible, safe and with high success rate and improvements in quality of life, without sexual side effects. PAE can be useful both for catheter removal and in selected patient keen to preserve ejaculation, with no benefit from medical treatment or unfit for standard surgery. Comparative studies between PAE and TURP are on going; moreover, additional study data regarding the long-term efficacy of PAE can certainly soon be expected.

SC24 Waterablation of the prostate for the treatment of lower urinary tract symptoms in men with benign prostatic hyperplasia: First Italian multicenter experience after 1-month of follow-up

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Aim of the study: Transurethral resection of the prostate (TURP) is considered the gold standard for minimally invasive treatment of lower urinary tract symptoms due to benign prostate enlargement of <80 ml. However, new technologies are facing and waterablation is gaining new interest in treating lower urinary tract symptoms (LUTS) secondary to benign prostatic hyperplasia (BPH). The Aquabeam system uses high-velocity water jets to robotically ablate prostatic tissue under real-time ultrasound guidance, with hemostasis achieved via a catheter balloon tamponade and a novel traction device or electrocautery.
Materials and methods: Waterablation was performed in 36 patients with symptomatic BPH in a multicenter prospective study. Baseline, peri-operative and 1-month urinary function data were collected, including uroflowmetry, international prostate symptom score (IPSS), IPSS-Quality of life (IPS-QoL) and post void residual (PVR).
Results: Mean age was 67.5 (SD 1.83), baseline mean IPSS was 20.4 (SD 1.15), baseline mean peak flow was 9.05 (SD 0.65) and mean prostate volume was 85.9 cc (SD 6.08). After 1 month of surgery, mean change of peak flow was +7.94 ml/s (SD 1.51)($p < 0.01$), of IPSS was –10.2 (SD 2.06)($p < 0.01$), of PVR –80.2 cc (SD 26.26) ($p < 0.01$) and IPSS-QOL was –2 (SD 4.11)($p < 0.01$). Median of catheterization (days) was 3.0 (SD 3.1) and median of hematuria 1.0 (SD 1.33) while the rate of post-operative antegrade ejaculation was 80.0% (30/6).
Discussion: We showed the first Italian multicenter experience for Waterablation to treat LUTS/BPH. Although the low number of treated patients and the low learning curve among center, the procedure was demonstrated to be safe and effective. Interesting, the rate of antegrade ejaculation is higher than other procedures reported in literature

SC25 Complications after Waterablation of the prostate for the treatment of lower urinary tract symptoms in men with benign prostatic hyperplasia

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