

catheterized due to chronic urinary obstruction. Mean OT and EBL were 101.51 ± 24.25 min and 138.28 ± 54.7 ml, respectively. Most of the patients were dismissed on post-operative day 3 and had the catheter removed on day 6. No Clavien-Dindo ≥ 3 complications were observed. At 1 month, the mean Qmax was 24.5 ± 9.6 ml/s and a significant improvement of IPSS (15.34 ± 4.9 vs 5.15 ± 2.04 ; $p = 0.002$) was reported.

Discussion: According to our experience, robot-assisted Freyer's simple prostatectomy is a safe and efficient option to treat patients with huge prostates.

V15

Robot-assisted “pure” Adenomectomy for large prostate adenoma: Is it the way to solve the bladder outlet obstruction and maintain a normal sexual function?

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Aim of the Study: The expansion of the indications of robotic technology let robot-assisted simple prostatectomy enter in the scenario of the surgical treatment of large benign prostatic hyperplasia (BPH). In this video we present our technique of Robotic-Assisted “urethral-sparing” Simple Prostatectomy, that we named “pure adenomectomy”.

Materials and Methods: Since August 2017 15 patients with large BPH (prostate >80 mL), significant Bladder Outlet Obstruction (BOO) and indication for BPH surgery were enrolled in this study. Patients found with significant median lobe at trans-rectal ultrasonography were excluded. Demographic and perioperative variables, early (within 30 days) functional results were recorded and analysed. Surgical technique. A transperitoneal, six ports approach was chosen. After the prostate gland is prepared, a transversal, anterolateral incision of the capsule is made halfway between the Dorsal Venous Complex (DVC) and the bladder neck. The cleavage plane between the surgical capsule and the adenoma is identified anteriorly and gently dissected at the level of prostate apex bilaterally. Once the left lobe is mobilized a median longitudinal incision is made at the level of anterior commissure. The urethra is medialized by suction device and gently dissected from the left lobe. At the end of this step the left lobe is removed. The procedure is repeated for the right lobe. Thus the urethra is spared inside the prostatic lumen. A hydro-distention test is performed to verify the urethral and bladder neck integrity. Prostatic capsule is then barbed sutured.

Results: Robot-assisted “pure” adenomectomy was completed in 12 patients. In these patients mean age was 65 years, mean prostate volume was 130 cc, 2 patients had urethral catheter due to urinary retention. Operative time was 95 minutes; blood losses were 200 mL. No intraoperative complications occurred. Bladder irrigation was stopped 24 hours after surgery in all the cases. Catheterization time and hospital stay were 3 and 4 days, respectively. No complications at catheter removal. All the patients who were sexually active before the intervention (8) resumed their activity within 2 weeks after surgery with ejaculation maintained in all patients. At 1 month time point the “trifecta outcome” (combination of International Prostate Symptom Score <8 , Qmax >15 mL/s, and no perioperative complications) was reached in all patients.

Discussion: The Robot-Assisted “Pure” Adenomectomy seems to be safe and effective in the treatment of large prostatic adenomas. In our preliminary experience, this procedure seems to represent the way to solve the bladder outlet obstruction and maintain a normal sexual function. Further studies with larger population and longer follow up are needed to confirm these preliminary findings.

V16

Monopolar Transurethral Enucleation of Prostatic Adenoma (mTUEPA): Technique and results after 250 cases

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Aim of the Study: To describe the evolved technique and our results after 250 monopolar Transurethral Enucleations of Prostatic Adenoma (mTUEPA).

Materials and Methods: from March 2015 to January 2018, 250 patients underwent mTUEPA at our centre because of lower urinary tract symptoms (LUTS) due to benign prostatic enlargement (BPE). Symptoms and uroflowmetry parameters were assessed at baseline and 3 months after surgery. Prostate volume (PV) was evaluated at baseline by means of transrectal ultrasound. mTUEPA is a retrograde enucleation of the prostatic adenoma performed by means of a standard monopolar resectoscope, with angled and straight loops. In order to maintain a constant pressure of 17 cm of H₂O in the bladder, either a 26 Ch Iglesias resectoscope with continuous irrigation or a suprapubic Korth cannula were used. For enucleation purpose, the prostatic adenoma is divided in 3 lobes, median, left and right. Three grooves are obtained with a conventional cutting loop at 4, 8 and 12, o'clock positions. Incising the mucosa just above the veru montanum, the almost avascular cleavage plane between the median lobe and the prostatic parenchyma is identified and developed, combining blunt dissection and pinpoint cauterization. Once the median lobe is enucleated, it is pushed inside the bladder and the procedure is repeated on the lateral lobes. A Richard Wolf (Knittlingen, Germany) morcellator is used to morcellate the enucleated adenoma. A three ways 18–20 Ch transurethral Foley catheter is left in place at the end of the procedure for continuous irrigation.

Results: Median preoperative PV was 78 gr (IQR: 59/94). Operation time was 121.5 min (IQR: 88/152). Overall, 6/250 (2.4%) patients required blood transfusion after surgery. Eight (3.2%) complications Clavien-Dindo Grade IIIb occurred. Significant improvements in terms of LUTS (International Prostate Symptoms Score: 14.1 ± 4.3 vs 4.8 ± 5 ; $p < 0.001$) and uroflow parameters (Maximum flow: 8.3 ± 2.8 vs 25.1 ± 9.3 mL/s; $p < 0.001$) were observed as early as 3 months after surgery.

Discussion: mTUEPA is a safe and effective technique, merging the principles of laser enucleation and the advantages of mechanical enucleation with standard monopolar TURP equipment.

V17

Modified en-bloc GreenLEP technique: Description and early results

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Aim of the Study: The prostate en-bloc enucleation with GreenLight laser (GreenLEP) was first described by Gomez Sanchez in 2015. As many other enucleation techniques GreenLEP is a challenging endoscopic procedure and requires a long learning curve. We describe a modification of this technique aiming to simplify the development of anterior dissection and to ease the learning curve of the procedure.

Materials and Methods: The procedure starts with vaporization of tissue between the two lateral lobes at 12 o'clock, from the bladder neck to the apex just proximal to the external sphincter. An hemi-circumferential incision is carried out starting from the right lateral aspect of veru montanum, delimitating the apex of the right lobe and

reaching the incision made at 12 o'clock. Mechanical enucleation of the right lobe is carried out using the tip of the scope to develop the virtual space between surgical capsule and adenoma. The dissection is aimed ventrally and the bladder is entered at 10 o'clock. At this point the tissue between the lateral dissection and the 12 o'clock channel previously created is mechanically dissected/vaporized and the anterior aspect of the right lobe is dissected free from the surgical capsule, proceeding from the bladder neck to the apex. The same steps are carried out on the left side. Final steps follow the standard en-bloc GreenLEP procedure, with the incision of crista urethralis, the development of the posterior plane, the division of bladder neck at 6 o'clock delivering the adenoma "en bloc" into the bladder. The procedure ends with morcellation of the adenoma in the bladder.

Results: From April 2016 to April 2018 two surgeons treated 48 patients with the modified en-bloc GreenLEP technique, with the following mean preoperative values: age 71 years (55–91), IPSS 23 (15–30), PVR 36 ml (15–140), Qmax 9 ml/s (4–15), PSA 6 ng/ml (0,5–16,9), prostate volume 103 cc (50–170), adenoma volume 65 cc (30–100), hemoglobin 14,5 g/dl (10,5–17,1), ASA score 2,3 (2–4). Mean operative time was 104 minutes (40–150), laser time 21 minutes (9–48), energy delivered 116.883 J (41.000–255.000). Mean post-operative values were: weight of removed tissue 51 g (24–140), hemoglobin 12,8 g/dl (9,1–15,4), hospitalization 4 days (3–8), time of catheterization 3,5 days (3–8). No patient needed blood transfusions, one had fluid retention following capsular perforation, one needed early endoscopic revision for hemostasis. At 6 months of follow up (40 patients) mean values were: IPSS 6 (2–11), PVR 27 ml (0–49), Qmax 17 ml/s (12–40), PSA 2,5 ng/ml (0,3–6).

Discussion: Our modification of en-bloc GreenLEP technique as described by Gomez Sancha makes the procedure more systematic, gives additional landmarks helping the surgeon orientation during the enucleation and simplifies the anterior dissection. We think that with this modification the learning curve of this challenging procedure could be easier and shorter.

V18

New technologies for old procedures when Firefly technology improves robotic bladder diverticulectomy

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Aim of the Study: Several techniques have been described to aid in the intra-operative identification of the bladder diverticula. The video shows the peculiar advantage of using Firefly Fluorescence Imaging da Vinci System during bladder diverticula detection and dissection.

Materials and Methods: Patient is placed in the lithotomic position and 30° Trendelenburg. Supraumbilical camera trocar is inserted with the Hasson technique. We use a four-arm robotic approach and a 5–6 ports placement consisting of: one 8-mm camera port, three 8-mm robotic ports and one to two assistant ports. The robotic ports run parallel at 14 cm from the pubic bone. Pneumoperitoneum is established at 12 Hg mm. The bladder is accessed via a transperitoneal route. We perform a flexible cystoscopy with the Firefly Fluorescence Imaging System on for the diverticulum detection. The peritoneum over the bladder is then incised to expose the diverticulum. We use this near-infrared technology also as a guide in the diverticulum dissection. Using sharp and blunt dissection, the diverticulum is resected to its neck. Completion of diverticulectomy and hydraulic tightness test. Drainage placement in the Retzius space and peritoneum reconstruction.

Results: Several approaches have been described for intra-operative diverticulum identification and its dissections: Parra used a cystoscopic transillumination of diverticulum; Das proposed the use of a Foley 50 mL balloon inserted in the diverticulum, while Nadler used a balloon catheter, made from a surgical glove, placed in the diverticulum and bloated with 180 cc saline solution. We present our technique in which transperitoneal bladder diverticulectomy is performed under the Firefly guidance that provide real-time, image-guided identification of key anatomical landmarks.

Discussion: In our experience, intra-operative use of Firefly Fluorescence Imaging da Vinci System makes identification and dissection of the diverticulum rapid, safe and effective with no additional cost, even in disadvantageous anatomic conditions such as lateral-posterior diverticula.