Materials and methods: 242 patients suffering from BPO (inadequate response or intolerance to medical therapy, any prostate volume, no prostate cancer, Qmax <15 ml/sec, IPSS score >10, PVR <300 cc) underwent en-bloc no-touch low-power HoLEP in our Department previous informed consent. Group 1 (07/2015–02/2017) included 108 patients operated with the partially en-bloc approach, group 2 (02/2017–09/2018) 134 patients operated with the totally en-bloc approach. The 50 W Auriga XL holmium laser device (Boston Scientific), settings 2.2 J energy, 18 Hz frequency, long pulse length, and the Storz morcellator were mainly used. Patients' demographics and clinical data were prospectively registered and correlated using the Student's t-test.

Results: Mean age was similar in both groups (68 years +/− 8 ds vs 70 years +/− 7 ds). Intraoperative parameters were equivalent, except for a slight increase in efficiency in group 2. In both cases efficiency was lower for small adenomas (<30 g), particularly high (>2 g/min) for large ones (>80 g). In group 1 (partially en-bloc) real adenoma weight was 45 g +/− 32 ds, energy used 59 kJ +/− 33 ds, enucleation time 34 min +/− 19 ds, efficiency 1.3 g/min +/− 0.7 ds (g/min), morcellation time 8.3 min +/− 7.4 ds. In group 2 (totally en-bloc) real adenoma weight was 51 g +/− 35 ds, energy used 55 kJ +/− 22 ds, enucleation time 32 min +/− 12 ds, efficiency 1.5 g/min +/− 0.7 ds (g/min), morcellation time 8.4 min +/− 7.3 ds. Global complication rates were also similar (11% group 1 versus 10.5% group 2), with about 7% of Clavien 1 in both cases (urinary retention +/− hematuria, fever), 0.7–1% Clavien 2 (blood transfusions), 3% Clavien 3a (hemostatic endoscopic revision), no Clavien grade 3b, 4 or 5.

Discussion: Partially and totally en-bloc no-touch low-power HoLEP are equally feasible, safe and efficient, particularly in case of large adenomas.

SC15	Does learning curve affect perioperative safety and early functional outcomes after HoLEP? Single surgeon experience in a referral academic centre

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Aim of the study: Holmium laser enucleation of the prostate (HoLEP) is a safe and effective option for the treatment of patients with benign prostatic hyperplasia (BPH). Despite its increasing adoption, this procedure has a steep learning curve and requires endoscopic skills. In this study we evaluated the impact of learning curve on perioperative and early functional outcomes after HoLEP in a referral academic Centre.

Materials and methods: Data from patients undergoing HoLEP from March 2017 to January 2019 were prospectively collected. All procedures were performed by a single experienced endoscopic surgeon. The learning curve phase was divided into three consecutive surgical eras (first 25 cases; 25–50 cases; >50 cases). Preoperative characteristics, including functional questionnaires [IPSS, IIEF-5, OAB-q, ICIQ-sf, stress urinary incontinence (SUI), QoL] and clinical parameters (i.e. prostate volume, PSA, uroflowmetry), perioperative data, as well as follow-up data 3 months after surgery were collected into our institutional database. Study endpoints were operative time, length of hospital stay, surgical complications and 3-mo functional outcomes.

Results: Overall, 137 patients were included. Preoperative characteristics (including age, BMI, comorbidity status, prostate volume, IPSS, IIEF-5, OAB-q and ICIQ-sf scores) were comparable among patients in the different surgical eras (p > 0.05) (table 1). No conversion to open prostatectomy or bipolar TURP were recorded. Both median enucleation and morcellation time showed a progressive decrease throughout the three eras [63, 50 and 45 minutes, respectively; p < 0.001 and 33, 25 and 18 minutes, respectively; p = 0.009]. Consequently, median overall surgical time was significantly longer in the first era as compared to the following ones (120 vs 95 vs 90, p = 0.03). Median time to catheter removal (4 vs 3 vs 3 days, p = 0.01) and hospital stay (5 vs 4 vs 4 days, p = 0.013) were also significantly different. Early (30-days) surgical complications rate was significantly different among the three groups [8 (32.0%) vs 5 (20.0%) vs 8 (9.2%), p = 0.02]; on the contrary, the rate of delayed (1–3 months) surgical complications were comparable [2(8%) vs 1 (4%) vs 5(5.7%); p = 0.83]. In detail, transfusion rate was significantly higher in the first surgical era compared to the following eras (8% vs 0% vs 0%, respectively, p = 0.01). At a 3 months follow-up, improvement in Qmax, IPSS, OAB and QoL scores did not differ across all the learning curve phases (all p > 0.05) (table 2).

Discussion: Our preliminary experience suggests that learning curve might significantly affect both enucleation and morcellation times, as well as early surgical complications rate and length of hospital stay. On the contrary, the learning curve seems not to impact on early functional outcomes and quality of life after HoLEP.

Table 1: Preoperative and surgical features in patients treated with HoLEP

Variables	Learning curve eras			p-value
	< 25 cases	25-50 cases	> 50 cases	
Preoperative features				
Age (years) (median, IQR)	73 (67 − 77)	69 (65 − 74)	70 (64 − 74)	0.339
BMI (kg/m^2) (median, IQR)	24.8 (22.9 − 30.4)	25.8 (24.2 − 28.1)	26.1 (24.6 − 29.2)	0.330
Charlson Comorbidity Index (median, IQR)	3 (3 − 5)	3 (2 − 4)	3 (2 − 4)	0.470
Prostate volume (mL) (median, IQR)	85 (71 − 108)	105 (80 − 130)	100 (85 − 120)	0.180
Preop Q max (mL/s) (median, IQR)	8.6 (8.1 − 10.6)	8.0 (6.9 − 9.7)	8.4 (7.5 − 10.0)	0.206
Preop Post voiding residual (mL) (median, IQR)	90 (50 − 265)	238 (100 − 600)	160 (90 − 285)	0.225
Preop PSA (ng/mL) (median, IQR)	5.67 (3.50 − 8.94)	5.49 (3.80 − 8.70)	4.65 (2.13 − 7.15)	0.913
Preop IPSS (median, IQR)	25 (22 − 28)	23 (22 − 27)	25 (20 − 30)	0.197
Preop IIEF-5 (median, IQR)	20 (12 − 22)	17 (15 − 20)	18 (12 − 22)	0.323
Preop OAB-q (median, IQR)	47 (37 − 50)	42 (27 − 51)	45 (34 − 66)	0.603
Preop ICIQ-sf (median, IQR)	0 (0 − 0)	0 (0 − 0)	0 (0 − 3)	0.589
Preop QoL (median, IQR)	4 (4 − 5)	4 (4 − 5)	4 (3 − 5)	0.507
Surgical features				
Enucleation time (min) (median, IQR)	63 (55 − 70)	50 (45 − 60)	45 (40 − 55)	0.001
Morcellation time (min) (median, IQR)	33 (15 − 50)	25 (15 − 35)	18 (15 − 25)	0.009
Overall surgical time (min) (median, IQR)	120 (90 − 135)	95 (80 − 120)	90 /70 − 110)	0.032
Energy adopted (kJ) (median, IQR)	150,990 (124,608 − 185,548)	133,461 (112,674 − 161,886)	135,408 (114,916 − 164,171)	0.254
Lasing time (min) (median, IQR)	40 (32 − 44)	35 (30 − 40)	33 (29 − 39)	0.117

Table 2: Postoperative and early functional outcomes of patients treated with HoLEP

Variables	Learning curve eras			p-value
	< 25 cases	25-50 cases	> 50 cases	
Postoperative and functional features				
Catheter time (days) (median, IQR)	3 (3 – 5)	3 (3 – 3)	3 (3 – 3)	0.013
Hospital stay (days) (median, IQR)	5 (4 – 6)	4 (4 – 4)	4 (4 – 4)	0.001
Postop Q max (mL/s) (median, IQR)	21.4 (18.0 – 24.5)	23.0 (18.0 – 28.0)	21.8 (18.0 – 26.5)	0.206
Postop Post voiding residual (mL) (median, IQR)	30 (0 – 50)	30 (0 – 50)	30 (0 – 50)	0.977
Postop PSA (ng/mL) (median, IQR)	0.90 (0.60 – 0.90)	1.00 (0.71 – 1.50)	0.94 (0.55 – 1.50)	0.06
Postop IPSS (median, IQR)	5 (1 – 9)	5 (0 – 7)	2 (0 – 7)	0.937
Postop IIEF-5 (median, IQR)	18 (14 – 21)	17 (13 – 20)	15 (10 – 20)	0.539
Postop OAB-q (median, IQR)	13 (13 – 20)	13 (13 – 16)	13 (13 – 15)	0.381
Postop ICIQ-sf (median, IQR)	0 (0 – 0)	0 (0 – 0)	0 (0 – 0)	0.529
Postop QoL (median, IQR)	1 (0 – 2)	1 (0 – 2)	1 (0 – 2)	0.700
Δ(postop-preop) Qmax (median, IQR)	21.9 (24.5-18.5)	22 (27.1-18.5)	21.8 (27-18)	0.93
Δ(postop-preop) IPSS (median, IQR)	-20 (-14 ; -24)	-20 (-18 ; -26)	-18 (-13 ; 23)	0.33
Δ(postop-preop) ICQ-sf (median, IQR)	-7 (-8 ; 5)	-3.5 (-1.5 ; -7)	-10 (-4 ; -7.5)	0.27
Δ(postop-preop) OAB (median, IQR)	0 (0 ; 0)	-2 (-1 ; -4)	-4 (-2;-5)	0.09
Early (within 1 month) surgical complications according to Clavien Dindo(n, %)	8 (32%)	5 (20%)	8 (9.2%)	0.02
CL. complications <2 n (%)	3 (12%)	1 (4%)	2 (2.2%)	/
CL. complications >=2 n (%)	5 (20 %)	4 (16%)	6 (7.0%)	
Delayed (> 1 month) surgical complications according to Clavien Dindo (n, %)	2 (8%)	1 (4%)	5 (5.7%)	0.83
CL. complications <2 n (%)	0 (0%)	0 (0%)	2 (2.2%)	/
CL. complications >=2 n (%)	2 (8%)	1 (4%)	3 (3.5%)	

SC16	**HoLEP reveals higher rates of incidental prostate cancer compared to traditional endoscopic surgery for benign prostatic obstrucion: A retrospective cohort study**

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Aim of the study: The vast majority of prostatic cancer is currently detected by needle biopsy, nevertheless, the rate of incidental prostate cancer (IPC) after surgery for benign prostate obstruction (BPO) remains 4–16%. Even if transurethral resection of the prostate (TURP) is still considered the gold standard technique, several laser mininvasive techniques for prostate tissue ablation are currently available. These technologies differ from TURP in interaction with prostatic tissue, so that differences exist in the features of prostate specimens as well as in the amount of tissue for pathologic evaluation since an enucleation technique allow the ablation of a greater percentage of tissue. The primary aim of this study is to compare IPC incidence in TURP and holmium laser enucleation of the prostate (HOLEP).

Materials and methods: We retrospectively evaluated men undergoing HOLEP and bipolar TURP, having no clinical suspicion of prostate cancer or a recent negative prostate biopsy. Preoperative recordings include pharmacological therapy, TRUS prostate volume, PSA, PSA density (PSAD). We calculated the percentage of ablated tissue by means of postoperative TRUS evaluation of prostate volume. Diagnosis of IPC and its pathological stage and grade. The t-student test was used to compare normal variables, Wilcoxon test to compare non-normal variables, univariate and multivariate non-parametric regression to evaluate the association between IPC and preoperative features.

Results: 418 consecutive men underwent HOLEP (n = 140, 33.5%) or TURP (n = 278, 66.5%). HOLEP group had higher PSA (5.2 ± 5.7 vs 3.7 ± 4.1 ng/ml, p = 0.001) and prostate volume (96.5 ± 43.1 vs 62.5 ± 33.7 ml, p < 0.001), while no difference was found in PSAD (0.05 ± 0.06 vs 0.07 ± 0.1, p = 0.622). A higher percentage of tissue was ablated by HOLEP (51.8 ± 16.0 vs 40.6 ± 15.3%, p < 0.001). Overall, IPC was found in 27 men (6.5%), with a significant difference between the groups: 14/140 (10%) in HOLEP group and 13/278 (4.7%) in TURP group ($X2 = 4.4$; p = 0.037); there was no difference in distribution Gleason score and T-stage between the groups ($X2 = 2.3$; p = 0.526; $X2 = 0.3$; p = 0.704).

Multivariate analysis showed that IPC is significantly associated with surgical technique (p = 0.047). Radiation therapy was given in 7 men of HOLEP group and 4 of TURP one while 5 patients of both the groups underwent radical prostatectomy. With a mean follow-up of 47.3 months, we recorded progression to metastatic stage only once, while 2 men died for non-cancer related causes.

Discussion: In our series, HOLEP was associated with a higher incidence of IPC. This different detection rate could be explained by the greater ablative power offered by an enucleation technique but we need further studies to evaluate whether the histological features of samples could facilitate the detection of IPC and, above all, to understand the clinical and oncological relevance of this increased detection rate.

SC17	**MoLEP vs HoLEP: Preliminary data on prospectic randomized trial on the comparison standard HoLEP and MoLEP (HoLEP with moses technology)**

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Aim of the study: Benign prostatic hyperplasia (BPH) is a common condition in older men. The treatment consists in ablation of prostatic tissue using a variety of techniques such as electrocautery, lasers, radiofrequency devices, microwave devices. Several techniques use laser energy to resect, enucleate or ablate hyperplastic prostate tissue. Holmium:Yttrium-Aluminium-Garnet (YAG; 2140-nm wavelength) laser is used for holmium laser enucleation of the prostate (HoLEP: H) technique. MoLEP (M) is a usage of HoLEP technique that endorse a modified laser pulse with Moses technology (Lumenis® MOSES Pulse120H). We are conducing this phase 3b study of HoLEP vs. MoLEP to expand the post-marketing data on safety and efficacy of MoLEP enucleation in BPH treatment.

Materials and methods: We are conducing an ongoing single center phase 3b study in men with moderate to severe BPH-associated symptoms refractory or intolerant to medical therapy or with acute or chronic urinary retention and prostate volume of >80 ml. Patients were excluded if they received previous surgery, there is a suspect of prostate cancer, there is an untreated urinary infection, there