Podium Session 2: Functional Urology and Reconstruction June 28, 2015, 1400-1500

POD-02.01

Unexpected long-term improvements in urinary and erectile function in a large cohort of men with self-reported outcomes following radical prostatectomy

Lee, Justin K.[1,2]; Sjoberg, Daniel D.[2]; Thong, Alan[1]; Mulhall, John P.[1]; Sandhu, Jaspreet[1]; Vickers, Andrew J.[2]; Ehdaie, Behfar[1,2]
[1]Urology Service, Memorial Sloan Kettering Cancer Center, New York, NY, United States; [2]Epidemiology and Biostatistics, Memorial Sloan Kettering Cancer Center, New York, NY, United States

Introduction and Objectives: It is often assumed that there is little improvement in incontinence and erectile dysfunction (ED) beyond 12 to 24 mos after radical prostatectomy. There is sparse data addressing this issue. We sought to determine the probability of achieving good urinary function (UF) and erectile function (EF) up to 48 mos post-operatively based on patient reported functional status at 12 mos.

Methods: We identified 2537 patients who underwent radical prostatectomy (RP) between 2007-2012 at a tertiary institution with self-reported UF and EF scores at 12 mos and beyond. Our main outcome was good EF as defined by IIEF ≥ 22 (range 1-30) or good UF as defined by a validated urinary questionnaire score of ≥ 17 (range 0-21). Kaplan-Meier analyses and multivariable Cox proportional hazards models were used to determine the probability of achieving continence and functional erections in patients that had not achieved good UF and EF by 12 mos. Patients with preoperative incontinence or ED were excluded.

Results: At 12 mos post-operatively, 629 (30%) and 897 (66%) patients had not achieved good UF and EF, respectively. Of those who were incontinent at 12 mos, there was increasing probability of achieving good UF at 24, 36, and 48 mos (33%, 49%, and 61%, respectively). To account for the possibility of adapting to urinary symptoms, we used pad free status as the outcome and found lower probabilities of UF recovery but a similar rising trend at the same time points (29%, 40%, and 47%, respectively). In patients who had ED at 12 mos, there was also an increasing probability of recovering EF at 24, 36, and 48 mos (21%, 32%, and 42%, respectively).

Conclusions: In this large cohort with self-reported outcomes, men continue to achieve improvement in UF and EF with increasing time from surgery, despite having incontinence or ED at 12 mos. The probabilities of achieving good function were considerably higher than initially anticipated. These findings may represent natural history but the effect of informative censoring, patients' response biases, and rehabilitative interventions are being investigated.

POD-02.02

Predictors of prostate cancer in patients undergoing holmium laser enucleation of the prostate for symptomatic benign prostatic hyperplasia

Elkoushy, Mohamed[1,2]; Elshal, Ahmed[1,3]; Elhiali, Mostafa[1]
[1]Urology, McGill University Health Centre, Montreal, QC, Canada; [2]Urology, Suez Canal University, Ismailia, Egypt; [3]Urology, Urology and Nephrology Center, Mansoura, Egypt

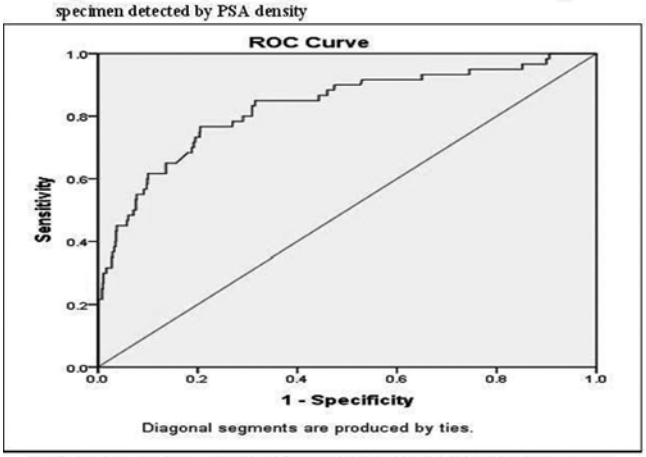
Objective: To determine the predictors of accidently-diagnosed prostate cancer (PCa) in patients undergoing holmium laser enucleation of the prostate (HoLEP) for symptomatic benign prostatic hyperplasia (BPH).

Methods: A retrospective review for patients undergoing HoLEP for BPH between March 1998 and August 2014 was performed. Preoperative prostate biopsy was performed whenever indicated. Patients with a known history of prostate cancer were excluded. PSA density (PSAD) was calculated by dividing preoperative PSA by prostate volume. Patients were divided into two groups based on absence of (GI) or diagnosis of cancer (GII) in their histopathological examination of their specimens. Univariate and multivariate logistic regression analyses were performed.

Results: Out of 1278 patient, 1242 were included in the final analysis, including 70 patients (5.64%) who were identified to have PCa. Prostate size was comparable between GI and GII (95.23±50 vs. 85.97±46.2 cc, p=0.12), respectively. PSAD was available for 71.5% of patients (Fig. 1). GII patients had significantly higher preoperative PSA (16.95±15.8 vs. 6.14±6.37 ng/mL, p<0.001) and PSAD (0.16±0.07 vs. 0.07± 0.05, p=0.007) compared to PCa free patients. Most GII patients (81.9%) had PCa detected in <10% of specimens and Gleason score ≤6. Patients with Gleason score>7 had a significantly smaller glands than those with lower grade cancer. Of interest, preoperative TRUS- biopsies were negative for 38 patients (54.3%) who subsequently had PCa. On multivariate regression analysis, preoperative PSA density was the only independent predictor for PCa diagnosis after HoLEP (OR: 3.62, 95% CI: 1.81- 5.12). The ROC curve analysis showed a PSAD cutoff value of 0.092 to have a sensitivity and specificity of 0.83 and 0.67, respectively.

Conclusion: Prostate cancer could be identified after HoLEP, even in those with negative preoperative biopsies. PSA density was found to be an independent predictor for diagnosis where repeated and extensive biopsies may be needed in suspicious patients. Despite being lower than that expected for diagnosis of prostate cancer, PSA density of 0.092 or higher should raise the suspicion for patients presenting with large prostates for HoLEP.

Figure 1: Probability of finding prostate cancer in HoLEP retrieved prostate specimen detected by PSA density



Cutoff point of PSAD associated with more probability of finding prostate cancer in HoLEP retrieved prostate specimen is **0.092** (Sensitivity **83%**, Specificity **67.5%**)

Fig. 1. POD-02.02.

CUAJ • May-June 2015 • Volume 9(5-6Suppl2)

POD-02.03

Evaluation of safety, efficiency and surgical outcomes between GreenLight 180W-XPS techniques: Comparison of pure photo-vaporization and vapor-incision techniques

Azizi, Mounsif[1]; Hai, Mahmood A.[2]; Gonzalez, Ricardo R.[3]; Eure, Gregg R.[4]; Kriteman, Lewis S.[5]; Hueber, Pierre-alain[1]; Alenizi, Abdullah M.[1]; Bienz, Marc[1]; El Hosni, Khaled[1]; Meskawi, Malek[1]; Zorn, Kevin C.[1]
[1]Department of Surgery, University of Montreal Hospital Centre, Montreal, QC, Canada; [2]Department of Urology, Oakwood Annapolis Hospital, Westland, MI, United States; [3]Scott Department of Urology, Baylor College of Medicine, Houston, TX, United States; [4]Department of Urology, Eastern Virginia Medical School, Norfolk, VA, United States; [5]North Fulton Urology PC, Georgia Urology, Roswell, GA, United States

Introduction and Objectives: Recent improvements in GreenLight 180W-XPS offer enhanced tissue vaporization and fibre durability. Aside from pure photo-vaporization of the prostate (PVP), various vapour-resection techniques have been described to help improve tissue resection, including vapour-incision techniques (VIT). We sought to evaluate the efficiency, safety and outcome parameters between GreenLight PVP and VIT.

Methods: Data of 955 XPS cases were retrospectively collected from 5 experienced surgeons at high-volume GreenLight XPS centers. Preoperative, operative and post-operative parameters were collected and compared between groups. PVP was defined as pure vaporization only while VIT included techniques to incise into adenoma and allow tissue resection and removal.

Results: As summarized in Table 1, men undergoing VIT(n=283) had larger prostate size, higher IPSS/QOL and retention preoperatively than those undergoing PVP(n=672). While VIT allowed greater delivery of energy (4.9vs3.5 kJ/g), operative time was longer and had greater need for >2 fibres (Table 2). There were no differences in intra- and post-operative adverse events. While no differences were observed in IPSS/QOL at 6 months post-operatively, more favorable QMax and PVR were observed at 6 months, along with greater PSA reduction, in the VIT group.

Conclusions: Both Greenlight PVP and VIT techniques can be safely used to treat men with BPH. Both offer significant and durable relief of symptom relief with comparable complication rates. Vapor-resection techniques suggest larger adenoma resection, however long-term data are required to assess if it correlates to greater treatment durability.

Table 1. POD-02.03.

	PVP (n=672)	VIT (n=283)	*p* value
Preoperative patient chraracteristics			
Mean age (years)	66.8	68.1	0.243
Previous BPH surgery (%)	22.3%	18.3%	0.162
Anticoagulation (%)	7.7%	6.4%	0.485
Mean IPSS	18.5	22.2	<0.001
Mean QOL	3.7	4.3	<0.001
Mean Qmax (mL/s)	9.2	7.3	<0.001
Mean PVR (mL)	183	251	0.001
Mean PSA (mg/mL)	4.3	5.8	<0.001
Mean prostate volume (g)	73.3	83.4	<0.001
Urinary retention (%)	18.0%	31.78%	<0.001

Table 2. POD-02.03.

	PVP (n=672)	VIT (n=283)	*p* value
Operative outcomes			
ASA>2 (%)	26.4%	32.1%	0.026
Mean operative time (min)	49.4%	47.3	<0.001
Mean laser time (min)	30.1	40.4	
Mean energy (kJ)	241.5	355.9	<0.001
Mean kJ/rostate volume (kJ/g)	3.5	4.9	<0.001
# fibres used (%)			<0.001
1	95.5%	82.3%	<0.001
2+	4.5%	17.7%	<0.001
Mean length of stay (days)	1.2	1.4	<0.001
Mean foley duration (days)	1.3	1.2	0.005
Adverse outcomes			
Intraoperative bleeding (%)	0.4%	0%	0.559
Postoperative bleeding/ clot retention (%)	0.9%	1.8%	0.230
Urinary retention (%)	5.4%	4.6%	0.749
Incontinence, de novo (%)			
Stress	1.6%	0.7%	0.365
Urge	1.9%	1.4%	0.790
Bladder neck stricture (%)	1.5%	1.1%	0.765
6-month outcomes			
Mean IPSS	6.1	5.5	0.266
Mean QOL	1.3	1.0	0.513
Mean Qmax (mL/s)	17.6	19.8	<0.001
Mean PVR (mL)	48.9	37.8	0.006
Mean PSA drop (mg/mL)	-1.8	-2.6	0.001
PSA percent reduction (%)	33.2%	44.3%	0.112
Surgical retreatment total	24 (3.6%)	8 (2.8%)	0.695

POD-02.04

Long-term onabotulinumtoxinA treatment in patients with overactive bladder provides durable improvements in urinary symptoms and quality of life: Final results of a 3.5 year study

Radomski, Sidney[1]; De Ridder, Dirk[2]; Sussman, David[3]; Sand, Peter[4]; Sievert, Karl-Dietrich[5]; Chapple, Christopher R.[6]; Nicandro, Jean Paul[7]; Zhou, Jihao[8]; Nitti, Victor[9]
[1]University of Toronto, Toronto, ON, Canada; [2]University Hospitals KU Leuven, Leuven, Belgium; [3]Rowan University School of Osteopathic Medicine, Stratford, NJ, United States; [4]Evanston Continence Center, Evanston, IL, United States; [5]University of Luebeck, Luebeck, Germany; [6]Sheffield Teaching Hospital, Sheffield, United Kingdom; [7]Allergan, Inc., Irvine, CA, United States; [8]Allergan, Inc., Bridgewater, NJ, United States; [9]NYU Langone Medical Center, New York, NY, United States

Introduction and Objectives: A multicenter extension study was conducted to assess the long-term efficacy/safety of repeat onabotulinumtoxinA (onabotA) treatment (tx) up to 3.5 yrs in patients (pts) with overactive bladder syndrome (OAB). Here, we present final study results.

Methods: Pts from 2 phase 3 studies were eligible to enter a 3-yr extension study in which they received multiple intradetrusor onabotA (100U) tx. Pts were treated as needed per individual request and after satisfying prespecified re-tx criteria. Results were analyzed for discrete subgroups of pts who needed exactly 1 (n=105), 2 (n=118), 3 (n=117), 4 (n=83), 5 (n=46), or 6 (n=33) tx during the study and the overall population who received 1-13 onabotA 100U treatments (n=543). Assessments included mean change from baseline in daily urinary incontinence (UI; co-primary

endpoint) and micturition episodes, Incontinence Quality of Life (I-QOL) total summary scores, median time to request for retreatment (duration of effect [DOE]), and adverse events (AEs).
Results: 543 pts received onabotA 100U, of which 51.2% completed the study. Discontinuations due to AEs/lack of efficacy were low (5.3/2.8%); other reasons were not tx-related (eg, personal reasons, study burden, site closure). Mean reductions in UI episodes/d were consistent after each tx for pts who received 1 (-3.1), 2 (-2.9, -3.2), 3 (-4.1 to -4.5), 4 (-3.4 to -3.8), 5 (-3.0 to -3.6), or 6 (-3.1 to -4.1) tx. Similarly, micturition episodes/d were consistently reduced for pts who received 1 (-3.0), 2 (-2.3, -2.7), 3 (-2.7 to -3.2), 4 (-2.8 to -3.2), 5 (-1.9 to -2.6), or 6 (-2.0 to -2.4) tx. Improvements from baseline in I-QOL scores were consistently ≥2.5 times the minimal important difference (+10 pts); increases were 31.7, 24.8 to 27.4, 30.8 to 33.1, 23.8 to 30.9, 26.3 to 36.0, and 30.0 to 35.6 for each subgroup. Median DOE in the overall population was ≤6 months for 34.2%, 6-12 months for 37.2%, and >12 months for 28.5% of pts; overall median DOE was 7.6 months. The most common AE was urinary tract infection. No change in safety profile with repeat tx was observed over time.
Conclusions: Long-term treatment with onabotA 100U consistently reduced daily UI and micturition episodes in pts with OAB and UI, with durable improvements in quality of life. No new safety concerns were observed over the 3.5-yr study.

POD-02.05

Absence of chordee of penile shortening, not improved voiding function, are associated with patient satisfaction after urethroplasty

Maciejewski, Conrad[1]; Haines, Trevor[1]; Rourke, Keith F.[1]
[1]Department of Surgery, Division of Urology, University of Alberta, Edmonton, AB, Canada

Objective: Surgeon reported outcomes in the treatment of urethral stricture disease have been well studied. Patient reported outcome measures are being developed for urethroplasty, and currently focus predominantly on voiding function. We aimed to examine patient reported quality of life scores using three validated instruments in order to identify factors that predict patient satisfaction following urethroplasty.
Methods: A three-part survey consisting of IPSS, IIEF Score, and a urethral reconstruction Quality of Life survey was prospectively completed by patients undergoing urethroplasty preoperatively and at 6 months postoperatively. The quality of life score included questions on genitourinary pain, urinary tract infection, post void dribble, chordee, shortening, milking, overall satisfaction, and overall health.
Results: A total of 136 patients were enrolled in the study from February 2011 to December 2014 with 91 patients having complete data at time of analysis for a total of 99 urethroplasties. Patients reported statistically significant improvements in IPSS ($p<0.001$). Ordinal linear regression analysis revealed no association between age, IPSS or IIEF scores and patient satisfaction. Wilcoxon signed-rank analysis revealed significant improvements in pain scores ($p=0.02$), UTI ($p<0.001$), chordee ($p=0.03$), perceived overall health ($p=0.01$), and satisfaction ($p<0.001$). Univariate ordered logistic regression identified stricture etiology, length > 4cm, and absence of UTI, pain, shortening, and chordee as predictors of patient satisfaction. Multivariate analysis of quality of life domain scores identified absence of shortening and absence of chordee as independent predictors of patient satisfaction following urethroplasty ($p<0.01$).
Conclusion: Patient voiding function and quality of life improve significantly following urethroplasty, but improvement in voiding function is not associated with satisfaction. Chordee status and penile shortening impact patient satisfaction, and should be included in patient reported outcome measures.

POD-02.06

Vesicovaginal fistula repair: Long-term experience

Zappavigna, Christopher J.[1]; Herschorn, Sender[1]
[1]Division of Urology, Sunnybrook Health Sciences Centre, University of Toronto, Toronto, ON, Canada

Introduction and Objectives: The commonest cause of vesicovaginal fistula (VVF) in North America is abdominal hysterectomy. Controversy still exists regarding the optimal timing of repair, surgical approach and role of interpositional flaps. We aimed to review our fistula patients with regard to etiology, perioperative parameters and outcome.
Methods: Between 1986 and 2014, 115 women underwent VVF repair. Charts were reviewed for etiology, location, presentation, surgical approach, post-operative complications, previous repair, complications and cure rate. The abdominal approach involved entering the plane between the bladder and vagina. Multiple layer closure was performed with omental interposition. The transvaginal approach involved a multilayer closure with flap interposition as required. Suprapubic catheters were frequently left indwelling for 4-6 weeks. The outcome was determined by cystogram.
Results: Mean patient age was 45 (21-81) years. Etiology of the fistula was hysterectomy in 54 patients (47%), C-section in 15 (13.0%), forceps delivery in 7 (6%), and catheter erosion in 11 (10%). Thirty-six (31.3%) of patients smoked cigarettes . Mean fistula size was 8.8 mm. Mean time from fistula occurrence to repair was 12.5 months (range 0-120). Sixty nine percent of patients presented with continuous incontinence. 35 patients (30.4%) had had a previous failed repair. Of those reported, 67% of the VVF repairs were performed with a transvaginal approach and 33% with an abdominal technique. Forty-three percent of vaginal repairs had a failed previous closure.
Tissue flaps were used in all of the abdominal repairs. Mean hospital stay was 2.79 days for the vaginal approach, 8.58 days for the abdominal approach ($P=0.0194$). Mean follow-up was 14.98 months (range 1-132). There was one recurrence in the series. At follow-up 11 (6.96%) experienced urge incontinence and 9 (7.83%) stress incontinence, (9.57%).
Conclusions: Both approaches are highly successful. Management techniques include multi-layer closure, flap interposition as required. There does not appear to be a mandatory wait time between time of injury and repair, provided the tissues appear healthy. Over the course of time the vaginal approach was favoured because of shorter hospital stay and success with previous failures.