THE IMPACT OF PRESERVATION OF THE PROSTATIC APEX ON THE URODYNAMIC CHARACTERISTICS IN DIFFERENT ORTHOTOPIC ILEAL RESERVOIRS

A.M. SHELBAIA, A.M. EL-NASHAR, S. A. ABD EL-HAY, A. H. ALI

Department of Urology, Cairo University Hospitals, Cairo, Egypt

Objective This study was carried out to evaluate the urodynamic characteristics of the Camey II, Kock's and W-configured ileal reservoirs utilized for orthotopic urinary diversion.

Patients and Methods Between January 2000 and 2002, 42 male patients prospectively underwent radical cystoprostatectomy for bladder cancer followed by orthotopic urinary diversion at the urology department of Cairo University hospitals. All cases were evaluated clinically, bacteriologically, radiologically and urodynamically including uroflowmetry, medium-fill and voiding enterocystometry and urethral pressure profilometry, which was done in the early and late postoperative period (at 3-6 months and 6-18 months). Patients were divided into four groups: Group I: 11 cases with preservation of the prostatic apex and creation of a W-neobladder. Group II: 11 cases without prostatic apex preservation and creation of a W-shaped ileal pouch. Group III: 12 cases without prostatic apex preservation and creation of a Camey II pouch. Group IV: 8 cases without prostatic apex preservation and creation of a Kock's pouch.

Results The patients of Group I had a larger mean neobladder capacity (699 ml) and

volume at which the first contraction occurred (315 ml) and a larger amount of residual urine (224 ml) as compared to Group II (511.1, 285 and 77.5 ml, respectively), Group III (375, 200 and 55 ml, respectively) and Group IV (563, 266 and 600 ml, respectively). Also Group I with a preserved prostatic apex had a higher mean intraluminal opening pressure (55 cm H_2O) and a higher pressure at maximum flow (62.36 cm H_2O) as compared to the patients with complete prostatic resection. **Conclusion** We conclude that the patients with a preserved prostatic apex (Group I) had a statistically significant higher mean residual urine in the early and late postoperative period and a significantly higher mean maximum cystometric capacity in the late postoperative period as compared to those recorded in patients with complete prostatic resection (Groups II, III, IV). A higher incidence of upper tract deterioration was detected in Group I (35%) vs. 4.6%, 27.8% and 12.5% in Groups II, III and IV, respectively.

Key Words cystectomy, urinary diversion, orthotopic bladder, ileum, urodynamics

INTRODUCTION

Bladder replacement by orthotopic substitutes is one of the real advances in modern urology. It has now become the treatment of choice for the patient whose bladder has been surgically removed for malignancy and other conditions[1]. A wide range of procedures involving almost all the segments of the gastrointestinal tract in different configurations has been utilized, with the detubularized ileum being the favourite segment to be used[2].

The necessity of detubularization and reconfiguration of the utilized intestinal segments to ensure the achievement of an excellent outcome has been supported mathematically[3,4], experimentally[5,6] and clinically by many authors who reported urodynamic and functional superiority of the techniques using detubularized ileal[7-11] or colonic[12-15] segments. On the other hand, authors who had initially given preference to the tubularized techniques had to resort to detubularization, ileal patching or transverse taeniamyotomies later on in

order to avoid a high reservoir pressure compromising their functional results[16-19].

The question as to which intestinal segment should be used for the construction of the reservoir, its type and its length is still being debated. Each segment has its enthusiasts and its opponents depending on many factors including anatomical accessibility, the surgeon's preference, inherent physiologic characteristics of each segment and the possible complications resulting from the resection of the segment and/ or its incorporation in the urinary tract[2,18]. However, an enterocystometric evaluation of detubularized reservoirs of different bowel segments showed a higher basal pressure[7-9,11,13] with a higher frequency and amplitude of uninhibited contractions in colonic reservoirs compared to ileal reservoirs [11,13,19,20].

In the present study, we evaluated the urodynamic features of Camey II, Kock's and W configured ileal reservoirs used for orthotopic urinary diversion.

PATIENTS AND METHODS

Between January 2000 and January 2002, 42 male patients were prospectively subjected to radical cystoprostatectomy and orthotopic ileal reservoirs in the form of Camey II, Kock's and W neobladders at the urology department of Cairo University Hospitals. The patients' age at the time of surgery ranged from 26-70 years with a mean of 49.2 ± 9.1 years. All patients were males and all had bladder cancer. The type of cancer pathology was squamous cell carcinoma in 20 (47.6%), transitional cell carcinoma in 16 (38.1%) and mixed transitional and squamous cell carcinoma in 6 patients (14.9%).

The tumors were staged according to the TNM classification. Six patients were staged T1, 12 patients T2 and 24 patients T3.

The tumors were graded according to the Mostofi grading system with 6 patients being graded GI, 21 patients GII and 15 patients GIII.

Patients with one or more of the following criteria were excluded from the study: carcinoma in situ or invasive tumor at the bladder neck or the prostatic urethra, extensive pelvic disease (T4) involving the prostate or extending close to the pelvic floor found intraoperatively. The presence of pelvic nodal disease N1, or perivesical fat involvement (T3b) away from the prostate did not preclude exclusion. Six patients in this study were staged N1, while the remaining cases were staged N0. A compromised renal function with serum creatinine ≥ 2.5 mg/dl was a contraindication for the procedure.

All patients were subjected to standard radical cystoprostatectomy entailing removal of the bladder, prostate and seminal vesicles with a wide margin of surrounding adipose tissue and the overlying pelvic peritoneum en masse with bilateral pelvic lymphadenectomy[21,22]. The pouch types constructed were W-shaped ileal bladder[23], Camey II pouch[24] and urethral Kock's pouch[25]. In 11 patients cystectomy was done with preservation of the prostatic apex, while in the remaining 31 patients the prostatic apex was not preserved during cystectomy.

The patients were divided into four groups as follows:

In Group I (11 patients / 26.2%), cystectomy was carried out with preservation of the prostatic apex and the pouches constructed were W-shaped bladders. Uretero-ileal anastomosis was done by the Le Duc technique[26] in 8 pouches (19%), by direct anastomosis[27] to the non-detubularized end of the pouch in 2 pouches (4.8 %), and in one pouch (2.4%) one ureter was anastomosed by Le Duc and the other ureter by direct anastomosis.

In Group II (11 patients / 26.2%) cystectomy was done without preservation of the prostatic apex. The pouches constructed were W-shaped bladders (Hautmann)[23]. Uretero-ileal anastomosis was done by creating two extramural serosally lined tunnels[28].

In Group III (12 patients / 28.6%) cystectomy was done without preservation of the prostatic apex and the pouches constructed were of the Camey II type. Uretero-ileal anastomosis was done by the Le Duc technique[26].

In Group IV (8 patients / 19%) cystectomy was done without preservation of the prostatic apex. The pouches created were urethral Kock's pouches with the ureters being implanted directly in the afferent loop above the constructed intussusception ileal nipple valve[29].

Table 1: Comparison Between Early Cystometric Findings in the Studied Groups

Cystometric Parameters	W-shaped (apex) n=11 Mean± SD	W-shaped (no apex) n=11 Mean± SD	T-Test P-Value	W-shaped (no apex) n=11 Mean ± SD	Carney II (no apex) n=12 Mean± SD	Kock's (no apex) n=8 Mean ± SD	F-test P-value
Residual urine (ml)	94.2± 33.8	52±38.6	0.028**	52±38.6	35±10.6	43±16.9	0.242
Max. cystometric capacity (ml)	390±90.7	355±73.5	0.106	366±73.5^{a}*	272±68.6^{h}*	316±75.8^{a}*	0.049**
Basal pressure (cm H2O) at:							
50% capacity	13.3±7.21	15.9±6.12	0.211	15.9±6.12	17.2±8.01	14.4±6.9	0.095
100% capacity	24.9±11.7	27.6±12.5	0.476	27.6±12.5	29±10.9	26±13.63	0.069
Max. intraluminal pressure (cm H2O) at:							
100% capacity	47±13.09	50±14.44	0.584	50±14.44	53±13.2	48±15.63	0.147
Volume at which 1st contraction occurred (ml)	160±65.2	180±55.7	0.114	180±55.7^{a}*	120±32.3^{h}*	192±46.99^{a}*	0.024
Max. amplitude of segmental contractions	22±10.01	23.1±13.1	0.291	23.1±13.1	24.3±14.1	22±9.96	0.920

* Groups sharing the same letter do not differ from one another (P = 0.05)
** Significant P value

Continence was evaluated both diurnally and nocturnally. The renal configuration was monitored at least 3 months postoperatively by IVP. Reflux was assessed by ascending and micturating pouchograms. The renal function was evaluated by serum creatinine levels.

In the early (3-6 months) and late (6-18 months) postoperative period all patients were subjected to urodynamic evaluation by uroflowmetry, medium fill enterocystometry (20 ml/min) and urethral pressure profilometry using the Dantec UD 5500 machine (Denmark). The terminology of the urodynamic variables was adopted according to the definitions of the International Continence Society unless stated otherwise. The contraction amplitude and duration were measured at 80% of the enterocystometric capacity. (The functional reservoir capacity was estimated to be 80% of the maximum cystometric capacity[30]). The frequency of uninhibited contractions and compliance were calculated during the last 5 minutes of filling.

The results were analyzed and compared using different statistical methods, arithmetic mean, standard deviation, t-test, Fisher's exact, chi square, Anova and two way Anova test. A P value < 0.05 was considered significant and a P value < 0.01 was considered highly significant.

RESULTS

In the early follow-up period, total diurnal continence was achieved in 100%, 72%, 75% and 75% of the patients in Groups I, II, III and IV, respectively. The only statistically significant difference was encountered between Group I and the other groups (P = 0.04). None of the patients in Group I developed urge or stress incontinence, while in Groups II, III and IV 9.1%, 16.7% and 12.5% of the patients, respectively developed urge and/or stress incontinence.

Nocturnal continence was achieved in 72%, 64%, 67% and 63% in the Groups I to IV, respectively, i.e. there was no statistically significant difference between the four groups (P > 0.05).

In the late follow up period total diurnal continence was achieved in 100%, 91%, 83% and 88% in Groups I, II, III and IV, respectively with no statistically significant difference bet-

ween the four groups (P > 0.05). As regards stress and urge incontinence, none of the patients in Group I developed stress or urge incontinence, while 9% of the patients in Group II developed stress incontinence, 8.3% of the patients in Group III developed urge and stress incontinence and 12.5% of the patients in Group IV suffered from stress incontinence. Nocturnal continence was achieved in 82%, 73%, 75% and 75% in Groups I, II, III and IV, respectively with no statistically significant difference among the four groups (P > 0.05). A voiding frequency of 3-5 times by day was recorded in 82%, 82% and 85% of the patients in Groups I, II and IV, while 67% of the patients in Group III voided 5-7 times by day. Nocturia of 2-3 times by night occurred in 67%, 63%, 67% and 67% in Groups I, II, III and IV.

The uroflowmetric parameters recorded in Group I were a mean voided volume of 293 ± 54 ml, a mean maximum flow rate (Qmax) of 15.4 ± 9.2 ml/sec, a mean average flow rate (Qave) of 3.9 ± 2.1 ml/sec and a mean voiding time of 79 ± 41.49 sec. In Group II, the mean voided volume was 312 ± 40 ml, the mean Qmax 20.7 ± 7 ml/sec, the mean Qave 5.4 ± 1.8 ml/sec and the mean voiding time 65.6 ± 27.2 sec. When comparing the uroflowmetric parameters of Groups I and II a statistically insignificant difference was encountered between the values of the mean voided volume (P=0.08), mean maximum flow rate (P=0.06), mean average flow rate (P=0.84) and mean voiding time (P=0.43).

In Group III, the mean voided volume was 215 ± 40 ml, the mean Qmax 18.1 ± 5.2 ml/sec, the mean Qave 4.9 ± 2.1 ml/sec and the mean voiding time 54 ± 28.2 sec compared to a mean voided volume of 290 ± 36.7 ml, a mean maximum flow rate of 19 ± 6.2 ml/sec, a mean average flow rate of 5.6 ± 3.9 ml/sec and a mean voiding time of 61.9 ± 40 sec in Group IV.

The uroflowmetric parameters recorded in the three bladder substitutes without preservation of the prostatic apex (Groups II to IV) were compared. As regards the mean volume voided, a statistically significant difference (P=0.04) was encountered between the patients with Camey II substitutes and those with W-shaped bladders, while a statistically insignificant difference (P>0.05) was encountered between the mean volume voided recorded in W-shaped bladders and that recorded in Kock's pouches. A statistically insignificant dif-

Table 2: Comparison Between Late Cystometric Findings in the Studied Groups

Cystometric Parameters	W-shaped (apex) n=11 Mean± SD	W-shaped (no apex) n=11 Mean± SD	T-Test P-Value	W-shaped (no apex) n=11 Mean ± SD	Carney II (no apex) n=12 Mean± SD	Kock's (no apex) n=8 Mean ± SD	F-test P-value
Residual urine (ml)	224.4±102.15	77.5±40.8	0.001**	77.5±40.8	55±30.5	60±29.3	0.904
Max. cystometric capacity (ml)	699±201.4	577.1±135.7	0.002**	577.1±135.7[a]*	375±112.4[h]*	536±107[a]*	0.011**
Basal pressure (cm H2O) at:							
50% capacity	6.63±3.93	7.5±3.79	0.106	7.5±3.79	9.2±4.45	6.5±3.75	0.247
100% capacity	16.13±5.11	16.5±7	0.292	16.5±7	22±6.2	15±7.07	0.062
Max. intraluminal pressure (cm H2O) at:							
100% capacity	35±14.3	38±11.8	0.076	38±11.8	42±16.6	35±13.2	0.069
Volume at which 1st contraction occurred (ml)	315±126	285±114	0.1811	285±114[a]*	200±76.8[h]*	266±102.69[a]*	0.023**
Max. amplitude of segmental contractions	20±8.2	22.13±13.35	0.948	22.13±13.35	21.3±10.46	20.32±11.44	0.969

* Groups sharing the same letter do not differ from one another (P = 0.05)
** Significant P value

ference was encountered between the Qmax (P=0.24), the Qave (P=0.37) and the voiding times (P=0.75) recorded in the three groups.

The evaluated cystometric parameters included: residual urine, maximum cystometric capacity, basal pressure at 50% and 100% capacity, maximum intraluminal pressure at 100% capacity, volume at which the first segmental contraction occurred and the amplitude of the maximum phasic contraction recorded in cm H_2O.

In the early postoperative period (3-6 months) the cystometric findings (Table 1) were found to be statistically significant between Group I and the other groups as regards the residual urine (94, 52, 35 and 43 ml in Groups I to IV, respectively) and the maximum cystometric capacity (390, 355, 270, 316 ml in Groups I to IV, respectively).

Also in the late postoperative period (6-18 months) the cystometric findings (Table 2) were found to be statistically significant between Group I and the other groups as regards the residual urine (224, 77, 55, 60 ml in Groups I to IV, respectively) and the maximum cystometric capacity (699, 577, 375, 536 ml) in Groups I to IV, respectively).

The voiding pressure parameters recorded included intra-reservoir pressure, abdominal pressure and neobladder wall pressure at opening and at maximum flow rate. In the patients with complete prostatic resection the mean intra-reservoir pressure at opening was 32.7 ± 3.1 cm H_2O, the mean abdominal pressure at opening 23.3 ± 7.4 cm H_2O and the mean neobladder wall pressure 9.3 ± 6.03 cm H_2O. At maximum flow rate, the mean intra-reservoir pressure was 35.3 ± 5.1 cm H_2O, the mean abdominal pressure 26 ± 6.6 cm H_2O and the mean neobladder wall pressure 9.3 ± 6.5 cm H_2O.

In the patients with incomplete prostatic resection the mean intra-reservoir pressure at opening was 55 ± 15.2 cm H_2O, the mean abdominal pressure at opening 42.25 ± 27 cm H_2O and the mean neobladder wall pressure 13.5 ± 7.8 cm H_2O. At maximum flow rate, the mean intra-reservoir pressure was 62.3 ± 11.5 cm H_2O, the mean abdominal pressure 50.3 ± 18.6 cm H_2O and the mean neobladder wall pressure 12.1 ± 8.7 cm H_2O.

Apart from the neobladder wall pressure at maximum flow and at opening, a statistically significant difference was found between the abdominal pressure at opening (P=0.044) and at maximum flow rate (P=0.035) in patients with complete or incomplete prostatic resection. Also, a statistically significant difference was detected between the intra-reservoir pressure at opening (P=0.05) and at maximum flow rate (P=0.023) in patients with complete or incomplete prostatic resection.

The urethral pressure profile parameters studied included functional urethral length, maximum urethral pressure (at rest) and maximum urethral closure pressure, both with a partially filled bladder (100 ml), at full capacity with the patient in the supine position and at full bladder capacity while the patient was erect. Squeeze pressure was checked with a partially filled bladder while the patient was supine. We compared the urethral pressure profile parameters of the patients with incomplete prostatic resection (preserved apex) to those of the patients with complete prostatic resection (no apex preserved) and to the preoperative urethral profile records. A highly statistically significant difference was encountered between Group I and the other groups as regards the mean functional urethral length (3.19 ± 0.44 cm vs. 2.17 ± 0.35 cm in patients with preserved prostatic apex and non-preserved prostatic apex, respectively) maximum urethral pressure at partially filled bladder (86, 60 and 106 cm H_2O in Group I, Groups II to IV and preoperative records, respectively) and maximum urethral pressure with a full bladder (88, 63 and 122 cm H_2O in Group I, Groups II to IV and preoperative records, respectively). A highly statistically significant difference was also encountered between Group I, the other groups and the preoperative records as regards the maximum urethral closure pressure with a partially filled bladder (79, 46, 85 cm H_2O in Group I, Groups II to IV and the preoperative records, respectively) and the maximum urethral closure pressure with a full bladder (61, 31, 103 cm H_2O in Group I, Groups II to IV and the preoperative records, respectively).

In comparing the urethral profile parameters of the patients with complete prostatic resection and those with W-shaped, Camey II and Kock's bladders, no statistically significant difference was found.

In our study four types of uretero-ileal anastomosis were used namely, direct[27], Le Duc[26], intussusception nipple valve[29] and extramural serosally lined ureters[28]. A higher incidence of renal deterioration was detected in renal units where the ureters were implanted directly (60% of the units) or by the Le Duc technique (30% of the units). A 12.5% deterioration was encountered with the intussusception nipple valve, and only 4.5% of the units showed deterioration after implantation of the ureters in extramural serosally lined tunnels. The incidence of reflux was 21.2% (7/33 renal units) with the Le Duc technique, 60% (3/5 units) after direct anastomosis and 12.5% (2/16 units) when using the intussusception nipple valve. All these cases were excluded from the study to prevent the effect of reflux on the urodynamic findings.

DISCUSSION

Bladder replacement by orthotopic substitutes is one of the real advances in modern urology. It has now become the treatment of choice for patients whose bladder has been surgically removed for malignancy or other conditions[1].

Continence in patients with orthotopic bladder substitutes depends on a balance between the urethral pressure exerted by the remaining urethra and the intra-reservoir pressure[25].

Benson et al.[31] reported that preservation of the prostatic apex increased the urethral pressure and the urethral closure pressure signifycantly, but that at the same time it did not increase the continence level significantly. In our study prostatic apex preservation increased the maximum urethral pressure and the maximum urethral closure pressure signifycantly compared to the pressure values observed in the patients with complete prostatic resection (Groups II, III and IV). At the same time it improved diurnal continence in the early postoperative period (3-6 months), while it did not improve diurnal continence in the late postoperative period (6-18 months) or nocturnal continence in the early and late postoperative periods. In this study patients with complete prostatic resection and W-shaped bladders, Camey II bladders or Kock's pouches showed comparable day and night time continence rates in the early and late postoperative periods.

Neither stress nor urge incontinence was encountered in the patients with a preserved prostatic apex (Group I), while in the early postoperative period stress incontinence was encountered in 9.1% to 16.7% and urge incontinence in 8.3% to 12.5% of our patients with complete prostatic resection. These rates improved in the late postoperative period to a range of 8.3% to 12.5% for stress incontinence and 0 to 8.3% for urge incontinence. Foda in 1992[32] reported that stress incontinence in his series of S-shaped bladders was 20% in the early postoperative period (3-6 months) and improved to 11% in the late postoperative period (6-18 months), while urge incontinence found in 10% of his patients in the early postoperative period was not encountered in any patient in the late postoperative period.

Nocturnal incontinence and nocturia are distressing problems in patients with orthotopic bladder substitutes. Iwakiri et al.[1] using the Kock's pouch reported nocturnal incontinence in 39% of their patients and nocturia (twice per night) in 92% of the nocturnally continent patients. Hautmann et al.[23] using the W-shaped bladder reported nocturnal incontinence in 33% of their patients and nocturia (2-3 times/ night) in 51% of their nocturnally continent patients. In our study we encountered both problems in all groups, even in patients with a preserved prostatic apex. In Group I nocturnal incontinence was encountered in 18% of the patients and nocturia (2-3 times/night) in 67% of the nocturnally continent patients. In Group II nocturnal incontinence and nocturia were found in 27% and 63% of the patients, respectively. In Groups III and IV noctural incontinence and nocturia (2-3 times/night) were encountered in 25% and 67% of the patients, respectively.

Melchior et al.[33] using the Camey II reservoir reported that most of their patients voided at intervals of 2-3 hours, while Casanova et al.[30] using the Kock's pouch reported voiding intervals of 3-4 hours in all patients. In our study, patients with W-shaped bladders and Kock's bladders had longer diurnal voiding intervals than those with Camey II bladders. Preserving the prostatic apex did not affect the diurnal voiding frequency.

The voided urine volumes varied greatly in different series depending on the functional reservoir capacity (maximum voided volume) and the amount of residual urine. The functional reservoir capacity was estimated to

be 80% of the maximum cystometeric capacity[30]. In our study, the W-shaped bladders and Kock's bladders were shown to have higher mean maximum cystometric capacities than the Camey II bladders. The mean residual urine volumes in the three bladder substitutes were comparable, while the mean voided volumes in the Kock's and W-shaped bladders were larger than those recorded in patients with Camey II bladders. The mean cystometric capacities, mean voided volumes and mean residual urine volumes were also comparable in the W-shaped and Kock's bladders. .

The dogma of a preserved prostatic apex being an obstructing agent in patients with orthotopic reservoirs was confirmed in our study. Our results showed that preservation of the prostatic apex reduced the maximum flow rate, but this reduction was statistically insignificant.

The mean abdominal pressure recorded during voiding at opening and at Qmax was significantly higher in patients with preserved prostatic apex than in those with complete prostatic resection.

In our series, comparing early and late postoperative cystometric capacity and volume findings showed that the maximum cystometric capacity and volume at which the first segmental contraction occurred increased signifycantly in all the studied groups. The basal pressure at 50%, 100% capacity and maximum intra-reservoir pressure decreased significantly in all groups, while the maximum amplitude of the segmental contractions remained unchanged.

The percentage of renal deterioration occurring with the different types of ureteroileal anastomosis used in this series was compared to that reported by other investigators[34]. Abol Enein and Ghoneim[35] reported a deterioration in 3% of the units when the ureters were buried in extramural serosally lined tunnels as compared to 4.5% in our series. Studer et al.[36] reported deterioration in 28% of the units when the ureters were implanted directly in a long afferent loop as compared to 60% in our series. In our series, a serum creatinine deterioration was noted in 8.7% of the patients who had Le Duc and direct ureteroileal anastomosis, while no deterioration was detected in patients who had extramural serosally lined ureters or intussusception

nipple valves for ureteroileal anastomosis. We, therefore, concluded that the highest incidence of renal deterioration was reported in the direct and Le Duc techniques followed by the intussusception nipple valve, while the lowest incidence was reported with the extramural serosal lined uretero-ileal anastomosis.

In conclusion, patients with a preserved prostatic apex had a higher incidence of urethro-ileal leakage (15.4%), urethro-ileal anastomotic stricture (9.1%) and urethral recurrence (9.1%) as compared to the patients with complete prostatic resection (Groups II, III, IV) who showed urethro-ileal leakage in 8.1%, urethro-ileal anastomotic stricture in 3.2% and urethral recurrence in 3.2%. These differences were, however, statistically insignificant. Patients with a preserved prostatic apex had a significantly higher functional urethral length, maximum urethral pressure and maximum urethral closure pressure than patients with complete prostatic resection.

Patients with W-shaped and Kock's bladders had longer diurnal voiding intervals and significantly larger mean voided volumes than patients with Camey II bladders.

The preserved prostatic apex was an obstructing agent interfering with efficient pouch emptying and, as the time went by the pouches would be strictured resulting in a higher post-void residual urine volume and a higher maximum cystometric capacity. W-shaped and Kock's bladders had a significantly higher capacity but insignificantly lower intraluminal pressures as compared to those recorded in Camey II. When the residual urine volume exceeded 100 ml, intermittent catheterization (2-3 times per day) was advised.

A higher rate of upper tract deterioration was detected in Group I (35% vs. 4.6%, 27.8% and 12.5% in Groups II, III and IV, respectively).

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RESUME

L'Impact de la Préservation de l'Apex Prostatique dans les Paramètres Urodynamiques dans Différents Réservoirs Iléaux Orthotopiques

Objectif Cette étude a été réalisée dans le but d'évaluer les charactéristiques urodynamiques des remplacements vésicaux type Camey II, Kock et par anse en W. **Matériel et Méthodes** De Janvier 2000 a 2002, 42 patients de sexe masculin ont bénéficié d'une cysto-prostatectomie radicale pour cancer de la vessie suivie d'une dérivation urinaire orthotopique au Département d'Urologie des Hôpitaux Universitaires du Caire. Tous les cas ont été évalués aux plans cliniques, bactériologiques, radiologiques et urodynamiques incluant une débit-métrie, entérocystométrie de milieu de remplissage et mictionnelle et une profilométrie qui a été realisée en post-opératoire immédiate et tardif (à 3-6 mois et à 6-18 mois). Les patients étaient divisés en 4 groupes : Groupe I : 11 cas avec préservation de l'apex prostatic et création d'un réservoir en W. Groupe II : 11 cas sans préservation de l'apex et création d'une poche iléale en W. Groupe III : 12 cas sans préservation de l'apex prostatique et création d'une poche de type Camey II. Groupe IV : 8 cas sans préservation de l'apex et création d'une Poche de Kock. **Résultats** Les patients du Groupe I ont eu une plus grande capacité néo-vésicale moyenne (699 ml), un premier besoin plus tardif (315 ml) et un résidu post-mictionnel plus important (224 ml) comparé au Groupe II (511.1, 285 et 77.5 ml, respectivement), au Groupe III (375, 200 et 55 ml, respectivement) et au Groupe IV (563, 266 et 600 ml, respectivement). Aussi les patients du Groupe I avec préservation de l'apex prostatique ont une pression de clôture moyenne plus élevée (55 cm H_2O) et une plus grande pression urinaire maximale (62,36 cm H_2O) comparé aux patients avec ablation complète de la prostate dans les Groupes II, III et IV, qui ont respectivement une pression de clôture de 32,67 et 35,3 cm H_2O. **Conclusion** Nous concluons que les patients avec préservation de l'apex prostatique (Groupe I) ont, de façon statistiquement significative, un résidu post-mictionnel moyen plus élevé aussi bien en post-opératoire immédiat que tardif et une capacité néo-vésicale moyenne plus élevée en post opératoire tardif comparés aux patients avec ablation complète de la prostate (Groupes II, III et IV). Une plus grande fréquence de détérioration du haut appareil urinaire a été détectée dans le Groupe I (35 %) versus 4,6%, 27,8% and 12,5% respectivement dans les Groupes II, III et IV.

All correspondence to be sent to:

Ahmed M. Shelbaia, M.D.
Department of Urology
Cairo University Hospitals
Cairo
Egypt