

that the role of neoadjuvant chemotherapy in patients with concomitant cis is questionable. Further studies with greater numbers of patients and survival data are required.

#### N44

##### The value of combined transurethral resection and adjuvant hormonal therapy in treatment of bladder endometriosis

T. Borkowski\*, B. Kuzaka, J. Michalec. *Medical University of Warsaw, Dept. of Urology, Warsaw, Poland*

**Introduction and Objectives:** Endometriosis affects 1-2% of menstruating women and up to 20% women after surgical pelvic operations. Most cases occur between 25-45 yrs. The peak incidence is around 30-40 yrs. Involvement of the urinary tract is seen in about 1% cases of this disease

**Material and Methods:** Since 1983 till 2008 seven female patients (age 32-46 yrs, mean age 37.6yrs) initially referred as bladder tumor underwent trans urethral resection. Histopathological examination revealed endometriosis of the urinary bladder. Clinical data are presented in the table I. The patients were followed-up with US and cystoscopy.

Case, Initials, Age (y)	Symptoms	US-Scan	Treatment	Results/follow-up
1, ZG, 32	Hematuria	Not performed	TURBT, hormonal	Asymptomatic during 276 months
2, ON, 32	Hematuria	Bladder tumor	TURBT, Partial resection of the bladder, hormonal	Asymptomatic 204 months
3, KB, 32	recurrent flank pain	Paravesical tumor compressing lower ureter	TURBT Nephrectomy hormonal	Asymptomatic 204 months
4, KM, 40	asymptomatic	Bladder tumor	TURBT, hormonal	Asymptomatic 120 months
5, SA, 40	asymptomatic	Bladder tumor	Cystectomy hormonal	Asymptomatic 84 months
6, GA, 46	dysuria	Bladder tumor	TURBT	Died 4 months later (Stroke)
7, WM, 46	dysuria	Bladder tumor	TURBT Hormonal.	Asymptomatic 6 Months later

**Results:** Histopathological examination revealed endometriosis of the urinary bladder. 6 out of 7 patient underwent adjuvant personally tailored hormonal treatment. Good results we achieved in all cases, after combined (surgical and hormonal) treatment in 6 cases and in 1 case after surgical treatment only. One patient died 4 months post TURT of stroke. Mean follow up was 128 months.

**Conclusions:** TURBT with adjuvant hormonal treatment of bladder endometriosis permits to achieve good long term results in all cases. No neoplastic transformation was observed during the follow-up.

#### N45

##### Laparoscopic partial nephroureterectomy in the treatment of hydronephrosis of the upper pole of duplex kidney with megaureter

P. Wiśniewski\*, P. Jarzemski, S. Listopadzki, R. Kalinowski. *University Hospital Number 2 Jana Bizziela In Bydgoszcz, Dept. of Urology, Bydgoszcz, Poland*

**Introduction and Objectives:** Complete duplication of the collecting system is one of the most frequent congenital defects and is detected in about 1 out of 125 (0.8%) people in the population. The ureteral orifice of upper kidney in the area of muscles structures causes clenching of the distal part of ureter and inhibits the flow from the upper poles of the kidney. Then the megaureter and hydronephrosis along with the atrophy of this section develop. The best treatment in the case of upper kidney failure is partial nephroureterectomy. In the literature one may find only few examples of laparoscopic partial nephroureterectomy, mostly concerning the pediatric urology. We are presenting heminephroureterectomy laparoscopic technique as a method giving the opportunity to make a spread intervention simultaneously in the upper and

lower part of the abdominal cavity without the need of changing trocars' location.

**Material and Methods:** A 25-year-old female patient was admitted to the Department of Urology because of hydronephrosis of right duplex kidney. The patient signed an informed consent to undergo laparoscopic transperitoneal upper-pole nephroureterectomy. The operation was carried out from the transperitoneal access using four trocars (2×10 mm, 2×5 mm) placed like in the laparoscopic transperitoneal nephrectomy. After moving the ascending colon it turned out that there was a megaureter directed toward the right accessory kidney. Continuing, a renal hilus dissected free. Pedicle was moved. It turned out that there were vessels running apart to the right accessory kidney. The vessels were clipped and cut off. Afterwards, using a harmonic knife the upper kidney was cut away from the lower one. In the second stage of the procedure the ureter was dissected free up to the intramural part of the urinary bladder. During the lower part of the abdominal cavity operation, laparoscopic tower location was changed without any changes in the location of trocars. Ureter was cut away in the lowest point after the bladder wall visualization.

**Results:** The operation was conducted without any complications, time: 215 minutes, lost of blood: 200 ml. During the first day patient remained in bed, in the second the intestinal feeding was included. In the seventh day the patient was discharged from hospital in a good general condition

**Conclusions:** Laparoscopic partial nephroureterectomy is a method giving a possibility of minimally invasive access to the upper and lower collecting system without the necessity of opening the abdominal cavity, reducing the hospitalization time, less painful and letting a patient come back to the normal activity much faster in the comparison with the classical method. A very important advantage of this technique is good cosmetic effect which in this situation is extremely significant in case of correction of congenital defects, especially because the operation is performed mostly in children and young people.

#### N46

##### Animal models of overactive bladder: Cyclophosphamide (CYP)-induced cystitis in rats

K. Juszcak<sup>1\*</sup>, M. Wyczółkowski<sup>2</sup>, P.J. Thor<sup>3</sup>. <sup>1</sup>Memorial Rydygier Hospital & Jagiellonian University Collegium Medicum, Dept. of Urology & Dept. of Pathophysiology, Cracow, Poland; <sup>2</sup>Memorial Rydygier Hospital, Dept. of Urology, Cracow, Poland; <sup>3</sup>Jagiellonian University Collegium Medicum, Dept. of Pathophysiology, Cracow, Poland

**Introduction and Objectives:** Cyclophosphamide (CYP) treatment induces chemical cystitis leading to bladder overactivity (OAB) in animals and humans. There is a great number of OAB models evaluations, which consider the bladder histology, as well as alterations in neurochemical, electrophysiological properties of bladder afferent neurons and reflex arcs activity in the spinal cord. However there are no data differentiating cystometrically acute and chronic models of OAB induced by CYP under urethane anaesthesia. The aim of this study was to investigate the influence of acute and chronic models of CYP-induced cystitis on urinary bladder motor activity in rats.

**Material and Methods:** Experiments were performed on 30 adult female Wistar rats. Acute and chronic chemical cystitis was induced by CYP. CYP was administrated intraperitoneally in a single dose 200 mg/kg i.p. to elicit acute inflammation or in 75 mg/kg i.p. every 3<sup>rd</sup> day for 7 days to elicit chronic inflammation. The animals were randomly divided into 3 groups of ten animals each: group I (healthy rats), group II (acute CYP treatment - single dose) and group III (chronic CYP treatment - 4 doses). Cystometry was performed 1 h after surgical procedure, under urethane anaesthesia, in

all groups. The surgical procedure was performed after 5 h of CYP administration in group II and after 24 h of the 4<sup>th</sup>CYP dose administration in group III. Saline solution was infused at a rate of 0,046 ml/min. continuously into the bladder. The measurements in each animal represent the average of 5 bladder micturition cycles, after obtaining repetitive voiding. We recorded: BP (basal pressure), PT (threshold pressure), MVP (micturition voiding pressure), ICI (intercontraction interval), Compliance, fBC (functional bladder capacity). Moreover we calculated MI (motility index) in 10-minutes intervals. In addition we analysed DI (detrusor index) in group I and DOI (detrusor overactivity index) in group II and III.

**Results:** After acute and chronic CYP administration we observed respectively significant decrease of MVP (21.5% in both groups), ICI (69.2% or 58.2%), fBC (69.4% or 58.3%). Also increase of BC (200% or 133%), DOI (580% or 200%), MI (76% or 38%). Compliance was significantly decreased (45.5%) only in chronic OAB. Significant changes between CMGs parameters in acute and chronic OAB were only concerned with detrusor overactivity characterized by DOI.

**Conclusions:** In summary, our present findings show that acute and chronic "chemical" CYP-induced cystitis lead to the overactivity of urinary bladder in rats. We have found no significant differences in basic CMGs parameters, such as BP, PT, MVP, ICI, fBC, Compliance in rats with acute or chronic OAB models. Our current results prove that both models are equally credible for cystometric evaluation.

#### Poster Session 4: Overactive bladder, Incontinence, Prostatitis, Miscellaneous

Friday, 11 September 2009, 14:50-17:00

#### Poster room 1

#### N47

##### Urodynamic effects of the bladder C-fiber afferent activity modulation in chronic overactive bladder model rats

K. Juszcak<sup>1</sup>\*, M. Wyczółkowski<sup>2</sup>, P.J. Thor<sup>3</sup>. <sup>1</sup>Memorial Rydygier Hospital & Jagiellonian University Collegium Medicum, Dept. of Urology & Dept. of Pathophysiology, Cracow, Poland; <sup>2</sup>Memorial Rydygier Hospital, Dept. of Urology, Cracow, Poland; <sup>3</sup>Jagiellonian University Collegium Medicum, Dept. of Pathophysiology, Cracow, Poland

**Introduction and Objectives:** The pivotal backgrounds for overactive bladder (OAB) development are as follow: the C-fibres sensitisation (increment of sensitivity to various stimuli acting on urotelium) and local effector function of afferent C-fibres endings leading to neurogenic inflammation. Considering the polymodal features of afferent C-fibre we explored the urodynamic effect of primary afferent neurons modulation on detrusor activity in normal and overactive bladder model rats.

**Material and Methods:** Experiments were performed on 48 female rats. OAB was induced by cyclophosphamide (CYP) – 75 mg/kg i.p., every 3<sup>rd</sup> day for 7 days. Animals were divided into 6 groups:

- I. control,
- II. OAB,
- III. OAB + capsaicin (CAP),
- IV. OAB + lidocaine (LDK),
- V. CAP,
- VI. LDK.

Cystometry was performed under urethane anaesthesia (1h after catheter implantation, infusion rate – 0.046 ml/min.), after 24h of the 4<sup>th</sup>CYP dose in group II, after 24h of the 4<sup>th</sup>CYP and CAP in group III, after 24h of the 4<sup>th</sup>CYP within 30 min. after LDK in group IV, after 24h of the CAP in group V, after 30 min. of the LDK in group VI. 1mM CAP or 2% LDK were instilled at a

rate of 0.15 ml/min. and left contact with the mucosa for 15 and 30 minutes, respectively. The measurements in each animal represent the average of 5 bladder micturition cycles, after obtaining repetitive voiding. We recorded: BP (basal pressure), PT (threshold pressure), MVP (micturition voiding pressure), ICI (intercontraction interval), Compliance, fBC (functional bladder capacity), MI (motility index), DI (detrusor index) and DOI (detrusor overactivity index).

**Results:** CYP leads to decrease of MVP, ICI, fBC and compliance. Also increase of BP, DI, MI were observed. CAP produced complete inhibition of detrusor contractility. We observed a phasic detrusor contractions of low amplitude with accompanying increased intravesical pressure. As a consequence of the lack of periodically generated MVP and incomplete bladder emptying, constantly lasting urine retention occurred. In case of critical bladder fulfil achievement we recorded constant, dripping flow of urine through the urethra. Contrary, LDK leads to increase of ICI, compliance, fBC and DI. CAP and LDK reduced the severity of OAB, leading to the improvement of cystometric parameters. Compared to rats with chronic OAB we observed, increase of ICI, fBC, compliance. Also decrease of DOI and MI were observed. Surprisingly, MVP was higher after LDK, compared to control animals with chronic OAB.

**Conclusions:** CYP-induced cystitis leads to the OAB in rats. The modulation of C-fibres activity by CAP and LDK reduces the severity of detrusor overactivity in rats with chronic OAB, and improve its urodynamic estimation. This observations confirm the hypothesis, that in pathophysiology of overactive bladder the pivotal role play two types of unmyelinated bladder afferent C-fibres, both capsaicin-sensitive and capsaicin-resistant.

#### N48

##### Alterations in urinary bladder histological structure and mast cells activity following overactive bladder in rats

K. Juszcak<sup>1</sup>\*, M. Wyczółkowski<sup>2</sup>, P.J. Thor<sup>3</sup>. <sup>1</sup>Memorial Rydygier Hospital & Jagiellonian University Collegium Medicum, Dept. of Urology & Dept. of Pathophysiology, Cracow, Poland; <sup>2</sup>Memorial Rydygier Hospital, Dept. of Urology, Cracow, Poland; <sup>3</sup>Jagiellonian University Collegium Medicum, Dept. of Pathophysiology, Cracow, Poland

**Introduction and Objectives:** Cyclophosphamide (CYP) damages all mucosal defence lines of urinary bladder and induces chemical cystitis leading to overactive bladder (OAB). The aim of this study was to estimate the effect of CYP on bladder wall architecture, as well as inflammatory cells and mast cells activity.

**Material and Methods:** Twenty four female Wistar rats were randomly divided into four equal groups: I – control, II – acute OAB, III – chronic OAB, IV – sham group. Acute and chronic OAB were induced by CYP in single dose (200 mg/kg ip.) and four doses (75 mg/kg ip. every 3<sup>rd</sup> day for 7 days of experiment), respectively. All animals were sacrificed by pentobarbital overdose. After bladder removal, thin sections were cut and stained with hematoxylin and eosin for histological assessment and with toluidine blue for mast cells evaluation. In each fragment 10 consecutive cross sections were examined. The severity of inflammation was examined according to 4 criteria (mucosal abrasion, hemorrhage, leukocyte infiltration and oedema). In addition, the total number of mast cells was counted at 200× magnification.

**Results:** The CYP-treated rats exhibited macroscopical signs of urinary bladder inflammation, i.e. redness, oedema (in group II, III) and also wall thickening, mucosal erosions, ulcerations, petechial hemorrhages on the serosal surface (in group III). In some animals of the group III the urine contained blood. Rats in the groups I and IV had healthy bladders and normal urine. Microscopic evaluations of acute and chronic