Purpose: To investigate open subinguinal varicocelectomy for infertile male patients.

Materials and Methods: Open varicocelectomies were performed in 175 patients between January 2006 and December 2015 for male infertility. All varicoceles were detected clinically according to the World Health Organization (WHO) classification and confirmed by scrotal color Doppler ultrasonography.

Results: Unilateral open varicocelectomy was performed in 175 patients. Mean operative time was 44.2 ± 13.1 min. Neither immediate major nor late procedure-related complications were noted. Among the 175 patients, 63 patients had both preoperative and postoperative semen analysis follow-up. The preoperative sperm concentration was 14.9 ± 14.8 (million/ml) and post operation sperm concentration was 37.0 ± 26.0 (million/ml). Preoperative sperm motility was 23.4 ± 13.8 (%) and post operation sperm motility was 36.8 ± 14.1 (%) respectively. Two (1.1%) recurrent varicoceles were detected within a mean follow-up of 24 months (range = 2–64). One (0.6%) hydrocele formation was found during the follow-up period.

Conclusion: Open subinguinal varicocelectomy could offer comparable semen result in infertile males as microscopic and laparoscopic varicocelectomies.

Female Urology & Urodynamics

NDP085:
INTERPLAY AMONG TH1/TH2/TH17/TREG CELLS IN KETAMINE CYSTITIS PATIENTS

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Purpose: Chronic ketamine use may cause ulcerative cystitis and bladder dysfunction, commonly referred to ketamine cystitis (KC). The pathogenesis of KC has recently been linked to an immune response to ketamine but has not yet been definitively established. This study proposes a novel immune mechanism to explain the irreversible bladder damage caused by KC.

Materials and Methods: Chronic ketamine use may cause ulcerative cystitis and bladder dysfunction, commonly referred to ketamine cystitis (KC). The pathogenesis of KC has recently been linked to an immune response to ketamine but has not yet been definitively established. This study proposes a novel immune mechanism to explain the irreversible bladder damage caused by KC.

Results: Serum IgE was significantly higher in KC patients (261.59 dder dysfunction, commonly referred to ketamine cystitis (KC). The pathogenesis of KC has recently been linked to an immune response to ketamine but has not yet been definitively established. This study proposes a novel immune mechanism to explain the reversible irreversible bladder damage caused by KC.

Conclusion: Open subinguinal varicocelectomy could offer comparable semen result in infertile males as microscopic and laparoscopic varicocelectomies.

NDP086:
OVARY HORMONE DEFICIENCY EXACERBATED HIGH FAT AND HIGH SUGAR DIET – INDUCED OVERACTIVE BLADDER IN A RAT MODEL

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Purpose: The pathophysiology mechanism of menopause in the metabolic syndrome associated bladder dysfunction is still not clear. The major aims of the present study were to examine high-fat-high-sugar diet and surgical menopause – induced metabolic syndrome by elucidating the critical role of oxidative stress mediated by mitochondria and endoplasmic reticulum in overactive bladder.

Materials and Methods: Female Sprague-Dawley rats were fed with high-fat-high-sugar diet with without ovarietomy surgery to mimic menopause and to induce metabolic syndrome. At six months after high-fat-high-sugar feeding, surgical menopause exacerbated these bladder damages. In addition, surgical menopause enhanced the generation of oxidative stress mediated by mitochondria-dependent pathways, and consequently attributed to bladder apoptosis. Such oxidative stress-enhanced bladder cell apoptosis and urethral barrier defects were potential factors that might play crucial role in bladder over-activity and interstitial fibrosis. Ovary hormone deficiency with high-fat-high-sugar feeding also induced bladder dysfunction via over-expression of muscarinic and purinergic receptors.

Conclusion: High-fat-high-sugar feeding enhanced the generation of oxidative stress mediated by mitochondria, while ovary hormone deficiency enhanced bladder apoptosis and interstitial fibrosis, exacerbated overactive bladder syndrome.

NDP087:
DEFICITS OF UROTHELIAL E-CADHERIN AND ZONULA OCCLUDENS-1 IN CHRONIC SPINAL CORD INJURED BLADDERS IMPROVED AFTER REPEATED DETRUSOR ONABOTULINUMTOXIN A INJECTIONS

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Purpose: Chronic spinal cord injury (SCI) induces bladder urothelium dysfunction. This study investigated the therapeutic effects on urothelial dysfunction after repeated detrusor injections of onabotulinumtoxinA in patients with SCI and neurogenic detrusor overactivity (NDO).

Materials and Methods: A total of 20 patients with chronic suprasacral SCI and refractory NDO were enrolled. The patients received 300U onabotulinumtoxinA detrusor injection every 6 months for four times. The urothelium was assessed by cystoscopic biopsy at baseline and 6 months after each onabotulinumtoxinA treatment. Immunofluorescence staining of E-cadherin, zonula occludens-1 (ZO-1), and tryptase for mast cell activity were performed. Urothelial apoptosis was also evaluated. The differences in urothelial dysfunction were compared between baseline and every 6 months after treatment. Bladder biopsies from 10 patients undergoing anti-incontinence surgery served as controls.

Results: Repeated 300U onabotulinumtoxinA injections into the detrusor significantly and consistently increased bladder capacity and decreased detrusor pressure at 6 months after each onabotulinumtoxinA treatment compared with baseline. Significantly lower E-cadherin and ZO-1 expressions, and increased apoptotic cell counts were noted in SCI bladders compared with controls (all P < 0.05). After repeated onabotulinumtoxinA injections, significantly greater distributions of E-cadherin (p = 0.042) and ZO-1 (p = 0.003) expressions were found at 6 months after 3rd onabotulinumtoxinA injection compared with baseline. Besides, after 3rd onabotulinumtoxinA treatment, no significant difference of E-cadherin and ZO-1 were noted compared to the control.

Conclusion: Urothelial dysfunction parameters such as adhesin and tight junction protein concentrations in SCI bladders recovered after repeated 3 times of onabotulinumtoxinA treatment. The therapeutic effects also
sustained after repeated onabotulinumtoxinA treatment. However, neurogenic inflammation and urothelial cell apoptosis after SCI could not adequately improve after repeated onabotulinumtoxinA injection.

NDP088: MATERNAL FRUCTOSE EXPOSURE PROGRAMS METABOLIC SYNDROME-ASSOCIATED BLADDER OVERACTIVITY IN YOUNG ADULT OFFSPRING

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Purpose: To investigate effects of MFE on developmental programming of MetS-associated bladder dysfunction and identify potential transcripts involved in the programmed bladder overactivity in adult offspring.

Materials and Methods: Pregnant Sprague-Dawley rats received a fructose-enriched or control diet during pregnancy and lactation. Male offspring were studied for the phenotypes of MetS and voiding behavior at the age of 12 week. Next-generation sequencing and qPCR were used to screen and validate transcript alterations in rat bladders. In vivo cystometry and in vitro detrusor contractility were used to evaluate bladder function. Bladder tissues were obtained for Western blotting of post-synaptic receptors.

Results: Compared to controls, MFE offspring showed bladder overactivity and traits of MetS. Alterations in bladder transcripts, including increased mRNA levels of M2- and M3-mAChR, P2 X 1 receptor, and VPAc2 receptor and decreased mRNA levels of TRPV4 receptor, were found in MFE offspring. Significantly decreased carbachol-induced contractility combined with upregulation of M2- and M3-mAChR receptors and P2 X 1 receptor proteins of the bladder were noted in MFE offspring.

Conclusion: Our data show MFE can program MetS-associated bladder overactivity in young adult male offspring. Alterations in bladder transcripts, including Chrm2, Chrm3, P2rx1, Trpv4, and Vipr2 gene expression, may be associated with primary or secondary programmed bladder dysfunction in MFE offspring. Decreased carbachol-induced contractility, along with upregulation of M2- and M3-muscarinic receptors and P2 X 1 receptor protein expression in the bladder, may underlie the pathophysiology of programmed bladder dysfunction in adult offspring to MFE.

NDP089: FEMALE BLADDER NECK DYSFUNCTION – A VIDEOURODYNAMIC ANALYSIS OF FEMALE VOIDING DYSFUNCTION

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Purpose: Diagnosis and treatment of voiding dysfunction (VD) in women can be challenging. In this study, we examined the heterogeneous nature of female VD and in particular, bladder neck dysfunction (BND) and its treatment.

Materials and Methods: We retrospectively reviewed videourodynamic reports (VUDS) from 1914 women who referred to us for investigation of VD. Based on their VUDS findings, female VD can be divided into 2 categories: bladder dysfunction (BD) and bladder outlet dysfunction (BOD). BOD is consisted of bladder neck dysfunction (BND), cystocele, dysfunctional voiding (DV), poor relaxation of the external sphincter (PRES), and urethral stricture (US). We focused on age distribution, presence of detrusor overactivity (DO), influence of co-morbidities and treatment modalities in BND.

Results: In female VD, BOD was accounts for 42.3% (810/1914) of all cases. BND is among the common causes of BOD (12.3%; 100/1914) (Fig.1). BND was prevalent in patients aged >55 years (72%). For majority of cases (51.6%), DO was a concurrent VUDS feature in those older than 55 years of age (Fig.2). Although several co-morbidities were identified in women with VD, including hypertension, type2 diabetes, coronary artery disease, chronic kidney disease and chronic obstructive pulmonary disease; none of these were found to have significantly correlation with BND. Use of alpha blockers can significantly improve maximal flow rate (Qmax) in BND from 7.6 ± 4.39 ml/s to 12.06 ± 4.99 ml/s (p = 0.000). Transurethral incision of bladder neck (TUI-BN) can also facilitate self voiding in the cases of BND refractory or intolerant to alpha blockers.

Conclusion: Voiding dysfunction (VD) in women is rather a complex and poorly-understood disorder. BND is prevalent in patients older than 55 and is highly associated with DO. Alpha blockers and TUI-BN are effective in improving Qmax in BND.

NDP090: CHOLECYSTECTOMY IS NECESSARY OR NOT ABOUT THAT KETAMINE ABUSE INDUCES CHOLESTASIS WITH COMMON BILE DUCT DILATATION?

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A 23-year-old woman was admitted due to upper and lower abdominal pain for a period of time. She had ketamine abuse since 6 years ago. She snorted ketamine powder about 3 gm/day. Lower urinary tract symptoms including frequency, voiding pain and suprapubic pain always bother her. She stopped using ketamine for about 1 year due to pregnancy. Lower urinary tract symptoms got resolution. Unfortunately, she snorted ketamine again because of poor couple relationships. About 5 gm/day of ketamine powder snorting. One month later, she suffered from epigastralgia, abdominal pain, suprapubic pain and gross hematuria. She presented to Emergency room for help. The evaluation of her abdominal pain include an abdominal ultrasound that showed a dilated common bile duct (CBD) and gallbladder, CT scan of the abdomen that revealed dilatation of the common bile duct and wall thickening of urinary bladder, and an esophagoduodenoscope that showed gastritis. 2 months later, she was seen in ER again due to severe abdominal pain. CT scan of the abdomen was performed again and showed common bile duct dilatation and suspect cholangitis. Laparoscopic cholecystectomy was done. Pathologic finding was abortive mucosal epithelium with inflammatory and edematous stroma and diffuse inflammatory infiltrates and Rokitansky-Aschoff sinuses. She still had ketamine abuse after operation. Severe abdominal pain and suprapubic pain troubled her. She asked urologist for further evaluation and treatment. The patient stopped ketamine abuse by combining pain control, infection control and psychotherapy. Dramatically symptoms and signs about abdominal pain got complete resolution one month later. We report the case of ketamine abuse with cholelithiasis and common bile duct dilatation in the absence of an obstructive lesion. Cessation of ketamine abuse is the first line treatment and to avoid unnecessary operation.

NDP091: INTERSTITIAL CYSTITIS/BLADDER PAIN SYNDROME HAS ASSOCIATION WITH HYSTERECTOMY IN MIDDLE AGE FEMALE

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Purpose: Symptoms of interstitial cystitis/bladder pain syndrome (IC/BPS) are often confused with uterine conditions. Gynecologists may therefore recommend hysterectomy which was inappropriate for these patients. This study investigated whether IC/BPS increases the risk of hysterectomy in a large nationwide retrospective cohort study.

Materials and Methods: From a national insurance database, we identified women diagnosed with IC/BPS between 2002 and 2013. Those with a history of hysterectomy before IC/BPS diagnosis were excluded. All women were stratified into three subgroups (younger, middle, older age) based on the propensity scores of 15 confounding factors, including age and comorbidities. All were followed until the end of 2013 to detect the event of hysterectomy. The hazard ratio (HR) of hysterectomy in the IC/BPS