

China-Japan-Korea (CJK) Andrology Session 6月22日 (土) 9:00~11:30 第2会場

Session 1

Chairpersons : Tomohiko Ichikawa (Department of Urology, Graduate School of Medicine, Chiba University)

Nam Cheol Park (Department of Urology, Pusan National University School of Medicine, Medical Research Institute of Pusan National University Hospital, Busan, Korea)

Extracorporeal shock wave therapy (ESWT) on Urology

Sae Woong Kim (Department of Urology, College of Medicine, The Catholic University of Korea)

Obstructive azoospermia: pathophysiology and microsurgical seminal reconstruction

Koji Shiraishi (Department of Urology, Graduate School of Medicine, Yamaguchi University)

Effect of low-dose PDE5i and low-energy shock wave on acute phase of Peyronie disease

Mujun Lu (The Department of Urology and Andrology, Renji Hospital Shanghai, China / Shanghai Institute of Andrology, Shanghai, China)

Efficacy and Safety of a Mixed Extract of Trigonella foenum-graecum Seed and Lespedeza cuneata in the Treatment of Testosterone Deficiency Syndrome: A Randomized, Double-Blind, Placebo-Controlled Clinical Trial

Nam Cheol Park (Department of Urology, Pusan National University School of Medicine, Medical Research Institute of Pusan National University Hospital, Busan, Korea)

Session 2

Chairpersons : Mikio Namiki (Hasegawa Hospital)

Zhong-cheng Xin (Andrology Center, Peking University First Hospital, Peking University, Beijing, China)

Diagnostic value of Dual-Energy CT angiography in the diagnosis of arteriogenic erectile dysfunction

Xian-Sheng Zhang (Department of Urology, The First Affiliated Hospital of Anhui Medical University, Hefei, China)

Fertility outcome of patients with testicular cancer

Shinichiro Fukuhara (Department of Urology, Osaka University Graduate School of Medicine)

A Novel Surgical Technique for Penile Curvature by Various Incision and Sealing with Collagen Fleece

Du Geon Moon (Korea University Guro Hospital, Seoul, Korea)

Human acellular dermal (HADM) implantation plus penile lengthening plastic surgery for small penis

Zhong-cheng Xin (Andrology Center, Peking University First Hospital, Peking University, Beijing, China)

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Extracorporeal shock wave therapy (ESWT) on Urology

Sae Woong Kim

Department of Urology, College of Medicine, The Catholic University of Korea

Low-energy shock waves (extracorporeal shock wave therapy, ESWT) are successfully used for treating orthopedic pain syndromes, fracture and wound-healing disorders. The impact of ESWT on the living tissue has not yet been fully elucidated. Extracorporeal shockwaves are pressure waves generated acoustically. Mechanical stimulation with ESWT increases NO synthesis and VEGF in the cells, leading to neovascularization and tissue regeneration. Therefore, it is known to be effective for chronic inflammation, wound healing, neuropathy, and ischemic heart disease. In the area of urology, ESWT is increasingly used for the treatment of diseases such as erectile dysfunction, Peyronie's disease, and chronic prostatitis / chronic pelvic pain syndrome.

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Obstructive azoospermia: pathophysiology and microsurgical seminal reconstruction

Koji Shiraishi

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By microsurgical seminal reconstruction: vasovasostomy and vasoepididymostomy (V-E), obstructive azoospermia is one of treatable male factors for infertile couples. Seminal obstruction *per se* causes azoospermia but concurrent spermatogenic dysfunction, which is milder than that of nonobstructive azoospermia, is involved in surgical failure. An enigmatic issue is if we perform seminal reconstruction properly, especially in V-E. We have done around 3,000 cases of microsurgical male infertility surgeries, including over 200 cases of V-E, however, results of V-E is still unsatisfactory.

Experimental rat vasectomy model has demonstrated that increased hydrostatic pressure in seminiferous tubules triggers the injury of germinal epithelium, following increased number of apoptotic primary spermatocytes through p53-Bax pathway. Simultaneously increased DNA synthesis in spermatogonia has been observed to compensate the loss of more differentiated germ cells. These phenomena occur within a couple of weeks in rats. As the obstructive period extends, decreased number of spermatogonia, thickened basement membrane and increased interstitial fibrosis are observed, resulting irreversible damages on spermatogenesis.

We have modified the technique of V-E: a combination of endo-to-side anastomosis and intussusception, and patency rate of recent 100 V-E series is 73%, following 32% of non-ART pregnancies. The clinical parameters to predict pregnancy are testicular histology: higher Johnsen score and enough DNA synthesis, which means that technical failure rate will be minimized and shares common observations demonstrated by experimental rat vasectomy model. We have to make efforts not only to sophisticate the technique of microsurgical seminal technique but also to investigate the pathophysiology of seminal obstruction more intensively and develop medical approaches to improve the spermatogenic dysfunction caused by seminal obstruction.

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Effect of low-dose PDE5i and low-energy shock wave on acute phase of Peyronie disease

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【Objective】 To investigate the efficacy and safety of low-dose PDE5i and low-energy shock wave (Li-SWT) in the treatment of acute phase of Peyronie disease (PD).

【Methods】 Twenty patients with acute PD within 6 month onset were collected. The patients were 26-52 years old with an average of 41.6 years. The patients were randomly divided into two groups, 12 of which were orally administered with 5 mg of tadalafil every night for 3 months; the other 8 received 4 times of Li-SWT.

Li-SWT uses the Renova shock wave therapy device with an energy density of 0.09mJ/mm², each time 3200 times in the penile plaque, 900 times in the left and right penile shaft, and once a week for 4 consecutive treatments as a cycle. All patients underwent ultrasound or MRI, penile bending angle measurement, improvement of subjective symptoms, and IIEF-5 scale before and after treatment.

【Results】 In the low-dose PDE5i group, the symptoms were improved (8/12) and the low-energy shock wave (Li-SWT) was also improved (5/8). The IIEF5 score in the PDE5i group improved from 12.8 to 17.5 and from 13.4 to 18.3 in the Li-SWT group, without significant difference between the two groups. The subjective symptoms of pain and discomfort were also improved in both groups. But the plaque size and penile curvature did not change significantly in both groups. In the PDE5i group, 2 patients had mild dizziness and back pain, while there was no obvious adverse reaction in Li-SWT group.

【Conclusion】 Both the low-dose PDE5i and low-energy shock waves can improve the symptoms of acute PD patients, mainly to relieve pain and improve erectile function in some patients. However, the above two methods did not significantly reduce PD plaque size and penile curvature. Both methods have good safety in the treatment of acute phase PD.

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Efficacy and Safety of a Mixed Extract of *Trigonella foenum-graecum* Seed and *Lespedeza cuneata* in the Treatment of Testosterone Deficiency Syndrome: A Randomized, Double-Blind, Placebo-Controlled Clinical Trial

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【Purpose】 The aim of this study was to investigate the efficacy and safety of a mixed extract of *Trigonella foenum-graecum* seed and *Lespedeza cuneata* (TFGL) for the treatment of testosterone deficiency syndrome (TDS).

【Materials and Methods】 Patients were instructed to take a placebo or 200 mg TFGL capsule twice per day for 8 weeks. The primary efficacy variable was the change from baseline in the Aging Males' Symptoms scale (AMS), as well as levels of serum total and free testosterone. Secondary efficacy measurements included changes from baseline in the number of 'yes' answers on the Androgen Deficiency in the Aging Male (ADAM) questionnaire, levels of serum total cholesterol (TC), high density lipoprotein cholesterol (HDL-C), low density lipoprotein cholesterol (LDL-C), triglyceride, all domain scores of the International Index of Erectile Function (IIEF), perceived stress scale-10 (PSS-10), as well as changes in body composition.

【Results】 The TFGL group exhibited a significant improvement in the AMS scores at 8 weeks, total testosterone at 8 weeks, and free testosterone at 4 and 8 weeks. At 4 weeks, 25% of the TFGL group changed to negative in terms of ADAM scores and 34.1% of the TFGL group had negative scores at the end of the study. The TFGL group exhibited a significant improvement in TC, HDL-C, LDL-C, triglyceride, IIEF scores and PSS-10 scores at 8 weeks.

【Conclusions】 The mixed extract of TFGL resulted in significant improvements in symptoms of TDS, as measured by the AMS, ADAM, PSS-10 and testosterone levels.

【Keywords】 Herbal medicine; Hypogonadism; Phytotherapy; *Trigonella foenum-graecum* Seed; *Lespedeza cuneata*

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Diagnostic value of Dual-Energy CT angiography in the diagnosis of arteriogenic erectile dysfunction

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【Background】 The purpose of this study was to investigate the diagnostic value of Dual-Energy CT angiography(DE-CTA) in patients with arterial erectile dysfunction.

【Methods】 A total of 49 patients with suspected arteriogenic ED were enrolled. Colour duplex Doppler ultrasonography (CDDU) was taken to evaluate arterial insufficiency of penile. After induction of an erection with prostaglandin E, DE-CTA performed with the latest generation 256-slice CT scanner was used to obtain angiograms of the pelvis and penis. The arterial system supplying the penis (internal pudendal artery, common penile artery, penile dorsal artery, and cavernous artery) was evaluated with Multiple maximum intensity projection (MIP) and volume rendering (VR).

【Results】 Of the 49 patients, 47(95.9%) had pelvic images of sufficient quality for evaluation. A total of 376 segments were finally obtained and 163 segments were considered as abnormal. The distribution was 29(17.8%) in internal pudendal artery segment, 31(19.0%) in common penile artery segment, 42(25.8%) in penile dorsal artery segment and 61(37.4%) in cavernous artery segment. The diagnostic validity of DE-CTA with CDDU as gold standard was sensitivity=85.4% and specificity=83.3%.

【Conclusions】 DE-CTA can detect macroangiopathy and delineate small vessels clearly, and thus can provide additional anatomic evaluation of artery compared with CDDU. DE-CTA has the potential to become a reliable method in the diagnosis of arteriogenic erectile dysfunction.

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Fertility outcome of patients with testicular cancer

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Testicular tumor often occurred in adolescent and young adult generations and can be progressive disease. In most cases, patients get cure even though with progressive stage. Patients need intensive chemotherapy for advanced stage, so their semen analysis after treatment often shows azoospermia. To preserve their fertility, sperm cryopreservation is available and recommended before treatment. The American Society of Clinical Oncology (ASCO) guideline recommend that oncologists should address the risk of infertility in patients with cancer of reproductive age and refer them to specialists in fertile treatment. However, the sperm preservation rate was low and the usage rates of preserved sperm is reported to be low. Also, fertility outcome after treatment is still unclear. To reveal recent fertility outcome for advanced testicular tumor patients, we assessed fertility outcome after intensive treatment for advanced testicular tumor. Most patients who was recommended to preserve their sperm desire to do so and preserve their sperm. However, before treatment, few patient's semen analysis already showed azoospermia or severe oligospermia. Some patient got married after treatment, used their cryopreserved sperm and got their own children. We report our cases and discuss about fertility preservation in advanced testicular cancer patients.

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A Novel Surgical Technique for Penile Curvature by Various Incision and Sealing with Collagen Fleece

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【Background】 Peyronie's disease is an acquired condition characterized by formation of fibrous plaques within the tunica albuginea of the corpora cavernosa. Plaques can lead to penile deformities during erection which disenable vaginal penetration . For the lack of effective medical treatment, gold-standard treatment is surgical correction such as plication, plaque excision with grafting and penile prosthesis in poor erectile function. Recently, tunical incision and sealing the tunical defect using collagen fleece (TachoSil®) was introduced for easy procedure than graft.

【Methods】 From May, 2018, 10 patients of Peyronie's disease were enrolled and treated with modified multiple incision and sealing with TachoSil® . 4 patients of congenital penile curvature were enrolled and treated with multiple transverse incision and sealing with TachoSil®. In these cohort of patients, the magnitude of the penis (curvature, length, any recurrence or other complication), erectile function and patient's satisfaction will be evaluated at every 3 months, prospectively.

【Results】 In 10 patients of Peyronie's disease, penile curvature was completely corrected in all 10 patients without loss of penile length. Erectile function was decreased from 15.8 to 12.6 of mean IIEF. In 4 patients of congenital curvature, total straightness was achieved with minimal plication in all patients without loss of erectile function. Postoperatively, penile length was significantly increased with additional lengthening technique.

【Conclusion】 Compared to previous surgical techniques, various incision of plaque and sealing with collagen fleece seems promising for treatment of Peyronie's disease. Long-term clinical outcomes for erectile function and tunical regeneration are necessary. For Congenital penile curvature, Transverse tunical incision and Sealing with Collagen Fleece and Minimal Plication was effective without loss of penile length. Long-term clinical outcomes with more patients are necessary. Despite these limitations, various incision and sealing with Tachosil is better for saving operative time and sealing does need to sewing the tunical defect.

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Human acellular dermal (HADM) implantation plus penile lengthening plastic surgery for small penis

Zhong-cheng Xin

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Small penis can be classified as Micro Penis(MP) caused by primary hypogonadism, Concealed Penis (CP) caused by penis was buried in fat under pubic bone hypertrophy, and Small Penis Syndrome(SPS) the penis length and girth close to normal, but are not satisfied with the penis size and worry, anxiety, and significantly affect the quality of life in clinically.

Hormone replace therapy non-responder MP, CP and SPS often need to plastic surgery, in this presentation introduce a new plastic surgical technical for small penis using Human Acellular Dermis(HADM) implantation for penis girth enhancement plus penis lengthening.

Patient was very satisfied with the effect of penis enlargement (penis length and penis girth were increased more than 2cm), and the self-report sexual function was improved without any effect on urination function.

Human Acellular Dermis(HADM) implantation for penis girth enhancement plus penis lengthening is safe and effective for plastic surgery for treatment small penis. The further study is recommended.