

so with the endothelial and smooth muscle contents and apoptosis index.

**Conclusions:** Insulin could partially restore the erectile functions and pathology changes in the streptozotocin-induced diabetes rat model. Further studies are needed to investigate the underlying mechanisms in the processes of diabetic erectile dysfunction.

**Keywords:** Erectile dysfunction (ED); diabetes mellitus (DM); insulin

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## AB141. Removal of numerous vesical magnetic balls with a self-made magnetic sheath

Huizhen Li, Chuanliang Xu, Shuxiong Zeng, Zhensheng Zhang, Xin Lu, Rongchao Wei, Junjie Zhao, Bo Yang, Yinghao Sun

Department of Urology, Changhai Hospital, The Second Military Medical University, Shanghai 200433, China

**Introduction:** Sexual curiosity and the quest for sexual excitement are the most frequent reasons for patients to introduce foreign bodies into the urethral or the bladder. Imagination and surgical skill are essential for an urologist to retrieve such vesical foreign bodies.

**Aims:** To describe a novel method for retrieving vesical magnetic balls, which was used for autoeroticism by an adolescent, by utilizing a self-made “magnetic sheath”.

**Patients and methods:** A 21-year-old inserted more than one hundred small magnetic balls into his urethra for sexual excitement, which lately causing symptoms of gross hematuria, frequent urination and acute lower abdominal pain when walking or urination. We invented a “magnetic sheath” by fixing a magnetic ball on the tip of a F9.5 ureteral access sheath to remove the foreign bodies in a

minimally invasive way.

**Results:** Under direct visualization of a F8/9.8 ureteroscopy, the “magnetic sheath” could easily firmly attach to the magnetic ball inside the bladder, which could pull out 5 to 15 balls each time. It took about 5 minutes to remove all of the 125 magnetic balls by utilizing our “magnetic sheath”.

**Conclusions:** The self-made “magnetic sheath” can make the task of removal of magnetic foreign body easy to urologist, which requires less time and surgical skills. The new equipment provides a new method for urologist to deal with some challenging task of removing metal vesical foreign bodies which was self-inserted for masturbation.

**Keywords:** Removal of numerous vesical magnetic balls; self-made magnetic sheath; sexual curiosity

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## AB142. The characteristics and therapeutic applications of low-intensity pulsed ultrasound

Hongen Lei, Yongde Xu, Ruili Guan, Huixi Li, Wenjie Tian, Lin Wang, Zhezhu Gao, Zhongcheng Xin

Andrology Center, Peking University First Hospital, Peking University, Beijing 100034, China; Knappe Molecular Urology Laboratory, Department of Urology, School of Medicine, University of California, San Francisco, CA, USA; Department of Urology, China-Japan Union Hospital of Jilin University, Jilin University, Jilin 130033, China

**Abstract:** Ultrasound is a form of mechanical energy with its acoustic pressure wave at frequencies range from 20 to 20,000 Hz. To date, ultrasound waves are not only used in imaging medicine for diagnosis, but also are performed in physical therapy (PT) medicine for the purpose of preventing and curing disease due to its thermal and non-thermal effects, and the ultrasound frequencies used in

PT are typically between 1.0 and 3.0 MHz. Low-intensity pulsed ultrasound (LIPUS) typically has an intensity at 30 mW/cm, pulse ratio 1:4 at 1,000 Hz, and frequency at 1.5 MHz, which has been demonstrated to have lots of beneficial effects in promoting bone-fracture healing, accelerating soft-tissue healing, inhibiting inflammatory responses and so on. The underlying mechanisms of biological effects of therapeutic ultrasound in PT medicine may be associated with the upregulation of cell proliferation through activation of integrin receptors and Rho/ROCK/Src/ERK signaling pathway, and with promoting multilineage differentiation of mesenchyme stem/progenitor cell lines through ROCK-Cot/Tpl2-MEK-ERK signaling pathway. However, it still needs an intense effort for basic-science and clinical investigators to explore the cellular and molecular mechanisms and biomedical applications of LIPUS on human body in the future.

**Keywords:** Low-intensity pulsed ultrasound (LIPUS); therapeutic ultrasound; ultrasound treatment

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## AB143. Characteristic of platelet-rich plasma and its effects on improving neurogenic erectile dysfunction

Yi-No Wu, Kuo-Chiang Chen, Chien-Chih Wu, Han-Sun Chiang

Ph. D Program in Nutrition & Food Science, Graduate Institute of Basic Medicine, Fu Jen Catholic University, New Taipei City, Taiwan, China; Department of Urology, Cathay General Hospital, Taipei, Taiwan, China; School of Medicine, Taipei Medical University, Taipei, Taiwan, China; Department of Urology, Taipei Medical University Hospital, Taipei, Taiwan, China

**Abstract:** Platelet-rich plasma (PRP) containing autologous thrombocyte growth factors is applied in regenerative medicine, but the lack of an optimized PRP preparation

protocol causes unstable therapeutic effects. The aim of this study was to optimize the PRP preparation method to obtain the largest amount of growth factors released and compare the effects of PRP from different preparation methods in restoring of erectile function in bilateral cavernous nerve (CN) injury rat model. The *in vivo* experiments used Sprague-Dawley male rats (n=24) which were randomly divided into four groups of equal numbers: (I) sham operation; (II) vehicle only (which underwent bilateral nerve crushing without treatment); (III) general PRP; and (IV) optimized PRP containing the largest amount of platelet-derived growth factor (PDGF)-AB (groups 3 and 4 underwent bilateral CN crushing with an immediate injection of the respective PRP into the corpus cavernosum). The intracavernous pressure (ICP) of all rats was monitored. Results demonstrated that in the PRP group prepared with the anticoagulant, ACD-A, the amount of PDGF-AB released was statistically higher than those of the other groups ( $P<0.05$ ). Greater concentrations of PDGF-AB were measured in PRP after chitosan treatment compared to treatment with a solvent or other activating factors. Additionally, storing PRP at  $-20^{\circ}\text{C}$  resulted in a significant increase in PDGF-AB released compared to storage at other temperatures. The optimized PRP prepared by stimulation with chitosan and incubated at  $-20^{\circ}\text{C}$  for 15 days had the largest amount of PDGF-AB and showed a synergistic effect on release ( $P<0.05$ ). The functional outcome measurement revealed improvement after bilateral CN injury occurred in the group treated with optimized PRP. It was concluded that optimized PRP with a high level of growth factors was more stable, and its injection into the corpus cavernosum facilitated recovery of erectile function.

**Keywords:** Platelet-rich plasma (PRP); neurogenic erectile dysfunction; bilateral cavernous nerve (CN) injury; platelet-derived growth factor (PDGF)-AB

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