THE EFFECT OF PERIURETHRAL INJECTION WITH VASCULAR ENDOTHELIAL GROWTH FACTOR (VEGF) LOADED-POROUS BEADS IN RAT MODEL OF INCONTINENCE
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Introduction and Objective: We studied the effect of VEGF-loaded porous beads as the bulking agent on the pudendal nerve denervation rat model.

Methods: Female Sprague-Dawley rats (6 weeks, n=24) were used in this study. The experimental animals were divided into 4 groups; group I (normal, n= 6), group II (denervation, n=6), group III (denervation and porous beads injection, n=6) and group IV (denervation and VEGF-loaded porous beads injection, n=6). Bilateral pudendal nerve transaction was done in the all experimental groups. After pudendal nerve transection, porous beads were injected into urethra in group III. VEGF-loaded porous beads were injected into urethra in group IV. After 4 weeks, the leak point pressure (LPP) was measured and histologic examination were performed by H&E staining and α-SMA antibody staining.

Results: After 4 weeks, LPPs in group I, group II, group III and group IV were 36.9±1.0, 24.7±2.4, 32.6±6.5 and 38.5±2.0 cm H2O. The LPP in group II was significant lower than group I (p<0.05). The LPPs in group III and group IV were significantly higher compared to group II (p<0.05). There were no differences between the LPPs in group III and group IV. The H&E staining of urethra showed atrophied urethral muscle in group II. Bulking effect of porous beads was observed in group III. In group IV, the proliferation of urethral muscle as well as bulking effect of porous beads was observed.

Conclusions: In this study, we demonstrated that porous beads could role as a bulking agent in the incontinence animal model. VEGF-loaded porous beads showed regeneration of atrophied urethral muscle as well as bulking effect of porous beads.