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LONG-TERM FUNCTIONAL OUTCOMES AND DURABILITY OF ARTIFICIAL URINARY SPHINCTER (AMS 800™) IMPLANTATION IN MEN WITH STRESS URINARY INCONTINENCE

Hypothesis / aims of study

Since its introduction in 1972, the artificial urinary sphincter (AUS) has been the gold standard treatment for postprostatectomy incontinence. Although several alternatives exist for the treatment of postprostatectomy incontinence, the AUS results in the highest long-term patient satisfaction rates and remains a first-line treatment for cases of severe incontinence. The aim of this study is to evaluate efficacy, complication rates, associated risk factors with complications, and long-term durability of artificial urinary sphincter (AUS) in men with stress urinary incontinence.

Study design, materials and methods

The medical records of 137 consecutive patients undergoing AMS 800™ implantation from July 2003 to March 2015 were retrospectively reviewed for demographic and surgical variables. Treatment success was defined as no need for pads, and social continence was defined as need for pad≤1/day at the end of the follow-up. Complications and durability of AUS were evaluated.

Results

Baseline characteristics are summarized in Table 1. Mean follow-up was 43.7 months. The rates of treatment success and social continence were 76.6% (105/137) and 83.9% (115/137), respectively. The rate of reoperation (revision or explantation) of AUS was 24.8% (34/137) and mean duration from AUS implantation was 27.6 months (range 0.2 to 77.1). Of these, explantation was performed in 4.3% (6/137) of patients. The etiology of reoperation were mechanical failure in 26.4% (9/34) and non-mechanical failure in 73.5% (25/34). The leading cause of reoperation was subcuff urethral atrophy (52.9%), and its mean duration from AUS implantation was 43.1 months (range 10.6 to 70.8). In logistic regression analysis with age, body mass index, comorbidities, prior pelvic radiation, prior anti-incontinence procedures, urethral cuff size, and hospital stay, current or prior smoker was a predictor of reoperation (p=0.011). Current or prior smoker underwent reoperation in 52.4% (11/21; 8 revisions and 3 explantations). Kaplan-Meier analysis demonstrated that 5-year device survival rate without reoperation was 66.8% (Figure 1).

Interpretation of results

Among 137 cases of AUS placement, the treatment success was achieved in 76.6% and social continence was achieved in 83.9%. The reoperation rate was 24.8%, and non-mechanical failure was found in 73.5%. Subcuff urethral atrophy was most common cause of reoperation (52.9%). Current or prior smoker was at high risk of reoperation. The 5-year device survival rate without reoperation was demonstrated in approximately 2/3 of patients.

Concluding message

Although there are appreciable rate of reoperation, AMS 800 TM can offer high rate of continence in men with stress urinary incontinence. Smoking was a risk factor of reoperation after AUS implantation.

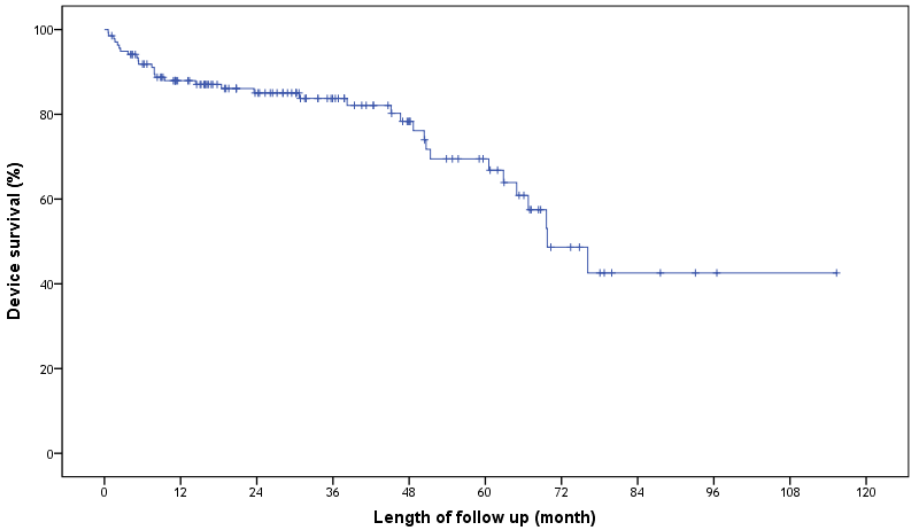
Table 1. Demographic, clinical information of patients undergoing primary AUS

	Primary AUS placement, n=137
Age (yrs), mean±SD	67.7±9.2
Body mass index (kg/m^2), mean±SD	25.1±2.6
Follow-up (month), mean±SD	43.7±28.2
Comorbidities, n (%)	
Diabetes	30 (21.9)
Hypertension	63 (46.0)
Vascular disease*	27 (19.7)
Current or prior smoker	21 (15.3)
Etiology for incontinence, n (%)	
Radical prostatectomy	
RRP	54 (39.4)
RALRP	31 (22.6)
RPP	15 (10.9)
LRP	10 (7.3)
HIFU	8 (5.8)
TURP	7 (5.1)

PVP	4 (2.9)
Neurogenic bladder	4 (2.9)
Urethral trauma	2 (1.5)
Radical cystectomy with ileal neobladder	2 (1.5)
Prior anti-incontinence procedures, n (%)	
Periurethral injection operations	22 (16.0)
Male sling operations	5 (3.6)

*Vascular disease includes coronary artery disease and peripheral vascular disease; AUS: artificial urethral sphinctor; RRP, radical retropubic prostatectomy; RALRP, robot-assisted laparoscopic radical prostatectomy; RPP, radical perineal prostatectomy; LRP. laparoscopic radical prostatectomy; HIFU, high-intensity focused ultrasound; TURP, transurethral resection of the prostate; PVP, photoselective vaporization of the prostate

Figure 1. Artificial urethral sphincter device survival estimated by Kaplan-Meier method



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