

OUTCOMES FOLLOWING TRANSCORPORAL PLACEMENT OF AN ARTIFICIAL URINARY SPHINCTER

Hypothesis / aims of study

Patients with a small-caliber urethra or those who have experienced atrophy or fibrosis secondary to previous surgery benefit from the transcorporal placement of an artificial urinary sphincter (AUS). Augmenting the urethral circumference utilizing a buttress of tunica albuginea from the corpora cavernosa to protect the dorsal urethral wall from erosion in cases of revision due to either erosion or atrophy has been described by Webster (1). The purpose of this study was to present a single surgeons' experience using this technique, to discuss patient outcomes assessed using a validated self-report questionnaire, and to describe a potential new application for this intervention.

Study design, materials and methods

We reviewed the charts of 18 patients with urodynamically-proven stress urinary incontinence who underwent transcorporal placement of an AUS from March 2003 to October 2008. We reviewed the indications for surgery, operative logs, post-operative evaluations, and reports of complications. In addition, the patients completed the International Continence Society (ICS) short form for men post operatively. Success is defined as 0-1 pad per day. All patients were impotent and did not desire treatment for their erectile dysfunction.

Results

The average age of patients was 77 years (SD= 6.17). Fourteen patients underwent primary transcorporal cuff placement and four had the procedure performed secondary to urethral atrophy in 3 and failure due to infection in a patient with a previous AUS in one. 14 patients had post-prostatectomy urinary incontinence (PPI) and 4 were incontinent as a result of primary radiation therapy for their prostate cancer. 44% of patients were exposed to radiation therapy and the great majority had atrophic or fibrotic urethras at surgery and had undergone previous incontinence surgeries, including 39% who has an AUS placed at another facility and were salvage procedures. At a mean follow-up of 35 months (SD = 20.65), the success rate, defined as a post operative pad usage of 0-1 pads per day, was 11/15 (73.3%). 7/18 patients had a 4.5 cm cuff placed and 11/18 had a 4.0 cm cuff. The mean operative time was 100 minutes (range = 70-145 minutes) and mean estimated blood loss was 25mls (range = 0-100mls). There was one intra-operative urethral injury, which was repaired at the time of AUS implantation. The mean pre and post operative pad usage was 6 (SD = 2.95) and 1 (SD = 1.19), respectively. The revision rate was 27.8%, resulting from 2 patients with erosions, 2 infections and 2 cases of urethral atrophy.

ICS short forms were completed by 15 patients. Average voiding score was 2/20 (SD= 1.15), average irritative score was 4/24 (SD= 4.73) and the average QOL score was 1/3 (SD = 0.96). Ninety percent of patients indicated that they would recommend the procedure to a friend, and were satisfied with the procedure.

Interpretation of results

An alternative treatment for urethral atrophy is down-sizing the cuff or placing cuffs in tandem, however most of the patients in our population had failed with a 4 cm cuff already in place. Tandem cuffs may be associated with a high erosion rate (2) as can previously irradiated patients (3).

Post operatively, patients scored low on the ICS short form for men. Interestingly, preoperative demonstration of reduced compliance or detrusor overactivity was not associated with a higher score and these patients were well controlled on anti-cholinergic medication.

Concluding message

Transcorporal placement of an AUS in the impotent patient is both safe and efficacious in patients with a small caliber, atrophic or fibrotic urethra. This technique can be utilized in the setting of an intra-operative urethral injury combined with a small caliber urethra. Efficacy and level of satisfaction in this subset of patients is equivalent to those undergoing traditional AUS cuff placement, however, due to the risk of erectile dysfunction, we are currently recommending that transcorporal AUS implantation is performed only in men with erectile dysfunction who do not desire treatment for this.

References

1. Guralnick ML, Miller E, Toh KL, Webster GD. Transcorporeal artificial urinary sphincter cuff placement in cases requiring revision for erosion and urethral atrophy. J Urol 2002;167:2075-78
2. Kowalczyk JJ, Spicer DL, Mulcahy JJ: Erosion Rates of the Double Cuff AMS 800 Artificial Urinary Sphincter: Long-term Follow-up. J Urol 156: 1300-1, 1996
3. Raj GV, Peterson AC, Webster GD: Outcomes Following Erosion of the Artificial Urinary Sphincter. J Urol 175: 2186-90, 2006

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Is this a clinical trial?	No
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Was informed consent obtained from the patients?	Yes