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15-YEARS OF EXPERIENCE WITH THE AMS 800 ARTIFICIAL URINARY SPHINCTER INSERTION IN A SPINAL INJURIES POPULATION

Hypothesis / aims of study
Neurogenic incontinence is a common problem following spinal cord injury (SCI) and results from intrinsic sphincter weakness and/or detrusor hyper-reflexia +/- hypocompliance. For severe or refractory incontinence secondary to sphincter weakness, implantation of an artificial urinary sphincter remains the gold standard of care. However, there is concern regarding potentially increased risks of device infection and/or erosion, particularly in those patients undertaking intermittent self-catheterisation (ISC).

We aim to assess the long-term safety and efficacy of the AMS (American Medical Systems®) 800 Artificial Urinary Sphincter (AUS) in a cohort of SCI patients.

Study design, materials and methods
We identified a study population of 42 patients (36 male, 6 female) with an acquired SCI (4 cervical, 32 thoracic, 5 lumbar, 1 sacral) and urodynamically demonstrable incontinence, in whom an AMS 800 AUS was implanted by a single surgeon at a specialist spinal injuries unit between 1997 and 2012. Simultaneous augmentation cystoplasty was performed in 27 patients for urodynamic findings of hypocompliance and/or hyper-reflexia. Simultaneous mitrofanoff formation was performed in 4 patients, and a further 5 patients already had augmented bladders at the time of AUS insertion. All patients were followed up for a minimum of 3 months (median 67 months, range 4-179 months). Each patient was also contacted by telephone for an up-to-date review of their continence status and its impact on their quality of life using the International Consultation on Incontinence Questionnaire (ICIQ).

Results
The median age at AUS implantation was 37 years (range 16-67 years), at a median time of 7.5 years since SCI (range 7 months-36 years). Bladder neck cuffs were placed in 35 patients and bulbar urethra cuffs in 7. In 20 patients a bladder neck cuff was initially inserted in isolation; 5 of these subsequently had the remaining components inserted.

Thirty-five patients regularly performed ISC (29 through their cuff and 6 via a mitrofanoff). Twenty-one patients (50%) were completely dry, including 12 who had their original artificial sphincter at a median follow-up of 5.6 years. A further 7 patients (16.7%) experienced leakage less than once per week. Furthermore, the majority of patients showed dramatic improvements in their ICIQ score whilst they had a functioning AUS in-situ (median improvement in score = 10).

Complications leading to permanent device removal arose in 11 patients (4 erosions, 7 infections). All cases of infection necessitating device removal occurred within one year of AUS insertion. Revision surgery was performed in 9 patients (7 cases of urethral atrophy, 1 case of loss of cuff compression, 1 eroded device tubing requiring removal). There was no significant association between simultaneous cystoplasty and/or ISC use, and device survival.

Interpretation of results
AUS insertion provides excellent continence rates in the acquired SCI population, with significant associated improvements in quality of life. Furthermore, neither simultaneous augmentation cystoplasty nor concomitant practice of ISC appear to increase device infection and/or erosion rates.

Concluding message
Artificial urinary sphincter insertion is safe and effective for the long-term management of urinary incontinence in the SCI population.

Disclosures
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