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Title: OUTCOMES OF SECONDARY REIMPLANTATION OF THE ARTIFICIAL URINARY SPHINCTER

Aims of study:

The American Medical Systems Model AS 800 artificial urinary sphincter (AUS) now has approximately an 18-year history of use. Durable success is frequent; however, secondary reimplantations and revision surgeries are not uncommon. Herein we report our experience with revision procedures.

Methods:

We retrospectively reviewed the records of 379 patients undergoing artificial urinary sphincter implantation or revisions at our institution between January 1990 and September 2000. Of these 116 cases were secondary reimplantations, performed in 85 patients. All were men with bulbar urethral cuff placement, 80 (94.1%) having post prostatectomy urinary incontinence. Female patients and males with bladder neck cuffs were excluded from this study.

The mean age of patients was 66.3 (range 26-82) years, and mean follow-up following secondary reimplantation was 28.1 (range 1-168) months. The mean age of the original AUS at the time of revision surgery was 42.4 (range 1-184) months.

Revision surgery was required for mechanical failure in 37 (31.9%), the leading cause being cuff leakage in 20 (17.2%). Non-mechanical causes for revision occurred in 79 (68.1%) patients and the leading reason was subcuff urethral atrophy in 46 patients (39.7%). Device erosion accounted for 13 (11.2%) of cases and device infection occurred in 3 (2.6%). In 6 device erosions, the original surgery had been performed at another medical facility and 5 followed urethral instrumentation!

Total device replacement was performed in 42 (36.2%) cases and component replacement in the remaining 74. Total replacement is performed in cases of device erosion, infection and in devices older than 3 years. The urethral cuff was replaced in its original site in 70 (66.7%), in a more proximal location in 13 (12.3%) and at a more distal location in 22 (20.9%). Of the latter 22 cases, 10 had tandem cuff implantation. Our philosophy was to replace at the same site if urethral atrophy did not preclude this decision, at a more proximal site if the original cuff had been implanted too distally, and at a distal site if proximal position and urethral atrophy made this necessary. When the cuff was replaced distally a transcorporal technique was used for urethral mobilization.

Results:

Of the 116 cases, 94 (81.0%) had an excellent outcome. Incontinence was mild in a further 14 (12.1%) requiring one pad per day, moderate in 6 (5.2%) requiring 2-3 pads per day and remained severe in 2 (2.6%). Thirty-one (26.7%) required further revisions at a later date, 14 (12.1%) for new mechanical

problems including cuff leak in 7 (6.0%) and non-mechanical causes in 17 (14.1%). In the latter group, 8 (6.9%) further subcuff atrophies occurred and 5 (4.3%) developed cuff erosion. However, reviewing the record of both primary and secondary AUS reimplantations performed in our institution, the overall rate of erosion was 9 of 379 (2.4%) cases.

Conclusions:

Our study suggests that the outcome and associated complication rates for secondary reimplantations of AUS are comparable to primary AUS implantation. The predominant reason for device revision was subcuff urethral atrophy and in such cases a new cuff can generally be replaced at the same site, providing a smaller size is available. If not, a more distal site is selected and we prefer a transcorporal dissection technique. Cuff failure continues to be the commonest mechanical malfunction and is generally managed by component replacement, in devices less than 3 years old.

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