

Day-case artificial urinary sphincter implantation for post- prostatectomy incontinence:
A comparative pilot-study.

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Hypothesis / aims of study

- Stress urinary incontinence (SUI) is a common complication of prostate surgery.
- Artificial urinary sphincter (AUS) is the gold standard treatment for post-prostatectomy SUI.
- Implantation of AUS has been traditionally performed with an overnight hospital stay in most healthcare systems.
- The aim of this prospective, comparative pilot study was to assess the feasibility, safety, and clinical outcomes of day- case AUS surgery.

Study design, materials and methods

- Prospective, comparative, non-randomized pilot study within a tertiary referral functional and reconstructive urology unit.
- Inclusion criteria:
 - Patients who had been listed for AUS insertion for post prostatectomy SUI and were operated over an 18-month period.
 - Patients of any age who had transurethral, open retropubic, laparoscopic or robotic radical prostatectomy for benign prostatic obstruction (BPO) or prostate cancer complicated by stress urinary incontinence.
 - Patients with previous radiotherapy or stable metastatic disease on androgen deprivation therapy.
 - Adequate understanding of the study purpose and postop instructions, escort to collect from hospital and spend first night with them.
- Exclusion criteria:
 - Patients who had previous major urethral surgery (urethroplasty), urological reconstruction or stress incontinence not related to prostate surgery.
 - Patients with previous infection/ erosion.
 - Patients who were deemed high risk for day-case surgery from the anaesthetic perspective.
- Primary Outcome:
 - Proportion of successful same day-discharges for the day case operations.
- Secondary Outcomes:
 - Complications for the two groups within the first 30 days and 1 year post surgery.
 - Continence outcomes for the two groups at the end of the study.

Results and interpretation

- Twelve patients consented for day-case surgery and 13 for standard of treatment.
- No differences in baseline clinical, demographic and urodynamics data between the two groups of patients.

	Day-case surgery (N=12)	Overnight stay (N=13)	p value
Age [median (IQR)]	71 (6.5)	74 (15.5)	0.70
BMI [mean (SD)]	27.6 (2.9)	29.6 (5.0)	0.23
ASA >2 [n (%)]	2 (16.7%)	3 (23.1%)	1.00
Smokers [n (%)]	2 (16.7%)	2 (18.2%)	1.00
Duration of incontinence [median, (IQR) in months]	36 (23.5)	66 (49)	0.02
BMI [mean (SD)]	27.6 (2.9)	29.6 (5.0)	0.23
Redo- AUS [n (%)]	1 (8.3%)	3 (23.1%)	0.59
Type of prostate surgery			
Transurethral	3 (25%)	1 (7.7%)	0.32
Open	0 (0%)	2 (15.4%)	0.48
Laparoscopic/ Robotic	9 (75%)	10 (77%)	1.00
Radiotherapy	1 (8.3%)	6 (46.2%)	0.07
Previous urological surgeries [n (%)]	5 (41.7%)	9 (69.2%)	0.24

	Day-case surgery (N=11)	Overnight stay (N=10)	p value
Capacity [median, IQR in ml]	449 (123.5)	416.5 (199)	0.86
Qmax [mean (SD) in ml/sec]	16 (6.7)	18 (10.5)	0.62
PVR [median (range) in ml]	0 (0,135)	0 (0,0)	0.19
Stress incontinence [n (%)]	10 (91%)	9 (90%)	1.00
Detrusor overactivity [n (%)]	4 (36.4%)	4 (40%)	1.00
RLPP [mean (SD) in cm H2O]	39.6 (11.2)	33.6 (11.1)	0.24

- Eight of the 12 patients (67%) on the day-case group were successfully discharged on the same day.
 - The reasons for the failed discharges included:
 - Postoperative symptomatic bradycardia (n=1)
 - Slow recovery from the anaesthetic (n=1)
 - Initially high post void residuals which resolved without intervention (n=1)
 - Decision to keep urethral catheter for 48 h due to suspected superficial urethral injury (n=1).
 - All patients in the day case group and all but one patient in the overnight stay group were continent or socially continent at 1 year follow up (0-1 pads/ 24h).
 - Postoperative reduction in the number of pads (median -4 vs -3 pads, p=0.62) was similar between the two groups.
 - Two patients in the day-case group and one in the overnight stay group experienced Clavien- Dindo >2 complication within one year post surgery.
- Conclusions
- AUS procedure is feasible and safe for selected patients in an outpatient setting.
 - The failed discharges in the day-case group of patients were mostly related with medical issues or delayed recovery from the anaesthetic.
 - None of these patients needed to be readmitted in the hospital within 30 days of the procedure.
 - Continence outcomes and complications were comparable in the two groups.