Title

The AdVance™ Male Urethral Sling – Medium Term Results in an Australian Cohort

Short Title:

The AdVance™ Male Sling – Does it Work?

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Tables: 3 (750 words)

Figures: S1 (Supporting Information)

Abstract Word Count: 248

Total Word Count: 4275

This is the author manuscript accepted for publication and has undergone full peer review but has not been through the copyediting, typesetting, pagination and proofreading process, which may lead to differences between this version and the Version of Record. Please cite this article as doi: [10.1111/ans.13890](https://doi.org/10.1111/ans.13890)

Key Words: Urinary stress incontinence, male urethral slings, prostatectomy

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Abstract

Background: Since 2008 the AdVance™ male urethral sling has emerged as a minimally invasive option for stress urinary incontinence. We aimed to evaluate the success of the AdVance™ sling using validated continence outcome measures.

Methods: Seventy-two patients treated with the AdVance™ sling completed validated questionnaires reporting on quality of life and functional outcomes. Incontinence was assessed according to pad weight, pad usage per day (PPD), ICIQ scores and PGI-I scores.

Results: At a median 52-month follow-up, 37(51%) patients were pad free or used a security pad, 18(25%) used $\geq 50\%$ fewer PPD and the remaining 17(24%) patients were classified as 'failed'. According to pad weights, 27(38%) patients were dry, 32(44%) had mild incontinence(<100mL/day) and 13(18%) had moderate(100-400mL/day) or severe(>400mL/day) incontinence. Patient satisfaction was high with 57(79%) very much or much better, 6(8%) somewhat better and only 9(13%) unchanged or worse. There was a trend to declining continence over time, although the majority remained improved. Patients with severe pre-operative incontinence performed significantly worse post-operatively($p=0.02$), as did those who had had prior pelvic radiotherapy($p=0.02$).

Conclusions: The Advance™ sling offers a high rate of success for the treatment of mild-moderate post-prostatectomy incontinence according to PPD, however

when using objective measures of continence, the success rates are lower. The improvement in urinary control is largely durable over the medium term, however they may decline beyond 4-years. Reduced efficacy is seen in those with a history of radiotherapy and severe incontinence, although the majority of these men are still improved with surgery.

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Introduction

Stress urinary incontinence is a common complication of radical prostatectomy, occurring in up to 40% of patients¹. The majority of cases are mild, and often improve in the first 12-months post-operatively with conservative management such as pelvic floor muscle training². However, approximately 5-10% of men go on to experience persistent incontinence that has a significant effect on their quality of life^{1 3 4}. If a period of conservative management fails to improve symptoms, surgical management is considered.

The gold standard in the treatment of severe post-prostatectomy incontinence(PPI) is insertion of an artificial urinary sphincter(AUS)⁵, however since 2008 the AdVance™ male urethral sling (Boston Scientific) has emerged as a minimally invasive option for PPI, with promising initial results⁶. The AdVance™ sling is placed via a perineal, transobturator approach, providing external support to the urethra under the bladder neck⁷ without resulting in obstruction⁸.

Several studies have reported on the short-term continence outcomes following sling insertion, however, given the procedure was pioneered less than 10 years ago, there is currently limited data on the medium- and long-term efficacy of the AdVance™ sling⁹⁻¹¹.

We aimed to evaluate the success of the AdVance™ sling over the medium-term, using a validated continence questionnaire to assess the

durability of the sling over time, to compare the efficacy in patients with varying degrees of incontinence, and to evaluate the effect of prior pelvic radiotherapy.

Methods

We identified a cohort of 86 consecutive patients treated with the AdVance™ sling for post-prostatectomy incontinence by a single surgeon between 2008 and 2014, who had a minimum of one year follow-up.

All patients had incontinence after radical prostatectomy (open, laparoscopic or robotic) and still required more than one continence pad per day despite a trial of conservative management. Detailed records were prospectively maintained, including a complete pre-operative medical history and clinical examination documenting the cause and nature of the incontinence, history of pelvic radiotherapy and previous interventions for incontinence. The severity of pre-operative incontinence was categorized by daily pad use and 24-hour pad weights. Mild incontinence was defined as <100mL/day, moderate as 100-400mL/day and severe as > 400mL/day.

All patients underwent a pre-operative cystoscopy. Patients with symptoms of overactive bladder(OAB), previous pelvic radiotherapy or previous continence procedures had urodynamics studies to detect abnormal detrusor activity and to evaluate the degree of stress urinary incontinence(SUI). Patients with predominant OAB were not treated with the AdVance™ sling. All patients

had a negative urine culture prior to the procedure. The AdVance™ sling was inserted using a standard procedural approach⁷. A urinary catheter was left in situ overnight and patients were discharged on the first post-operative day following a trial of void. Patients were reviewed at 1-2 weeks post-operatively then at 3 months. Any peri-operative complications and the effect on post-operative urinary control at 3 months based on pad usage per day (PPD) were recorded.

All patients were contacted at a fixed time-point in 2015 and completed a follow-up questionnaire. This contained the International Consultation on Incontinence Questionnaire-Short Form (ICIQ-SF), two questions on daily pad use and 24-hour pad weight, and the Patient Global Impression of Improvement (PGI-I) questionnaire. The ICIQ-SF is a validated questionnaire for assessing the severity of urinary incontinence that has good correlation with 24-hour pad weights. Scores may be divided into the following three severity categories: mild (1–5), moderate (6–12), severe (13–21)¹². The PGI-I is a validated questionnaire to evaluate quality of life patients with urinary incontinence¹³. If the patient did not return the questionnaire within 30 days, a follow-up phone call was made to complete the questionnaire by phone.

The endpoints for analysis were 24-hour pad weights and PGI-I scores. Secondary endpoints were pad per day usage (PPD), ICIQ scores and the effect of pre-operative radiotherapy on post-operative continence outcomes. Regarding PPD, 'Cured' was defined as no pad use, or a security pad only. 'Improved' was defined as a 50% or greater reduction in the number of pads used per day.

Patients who had not improved, or those who had required an AUS were classified as 'failed'. Incontinence severity as assessed by pad weights was defined according to the pre-operative definitions (mild incontinence was defined as <100ml/day, moderate as 100-400 mL/day and severe as > 400mL/day).

Data were entered into a Microsoft Excel spreadsheet (Microsoft Corporation, Redmond, Washington, USA) and analysed using Stata 13.0 (StataCorp LP, Texas, USA). Data analysis was performed independently of the surgeon. A two-tailed Fisher's exact test was used to compare categorical variables. P-values below 0.05 were considered statistically significant. Low-risk ethics approval for this study was obtained Cabrini Human Research Ethics Committee(05-25-08-14).

Results

Patients

There were 86 consecutive patients treated with the AdVance™ sling between 2008 and 2014. The median age(range) was 67(54-86) years. Eighteen(21%) patients had previously undergone pelvic radiotherapy, and 7(8.1%) patients had a history of urethral bulking agent injection (Macroplastique or Collagen). Four patients had simultaneous insertion of an inflatable penile prosthesis for erectile dysfunction. Pre-operatively, 31 (43%) patients had mild incontinence, 31 (43%) had moderate and 10 (14%) had

severe incontinence. Post-operative urinary retention occurred in 22(25%) patients, however no slings required incision or removal to restore voiding. Post-operative complications consisted of one sling removal for post-operative infection (Clavien IIIb) and one superficial wound infection requiring antibiotics (Clavien II). There were no haemorrhagic complications.

Of the 86 patients, 14 cases(16%) were excluded from the analysis; in one patient, the procedure was abandoned due to severe peri-urethral adhesions, one sling was removed due to post-operative infection and 12 patients(14%) were lost to follow-up. 72(84%) patients completed the questionnaire at a median (range) time of 52(18-89) months post-procedure.

Efficacy

Two patients required salvage insertion of an AUS during the follow-up period, at 27 and 33 months respectively. One patient underwent sling insertion for severe incontinence and had a history of prior radiotherapy, the other had moderate incontinence and had not been irradiated.

At 3 months post-operative, the majority of patients were continent, with 58(81%) not requiring any regular pad use. Only one patient was classified as 'failed' at this time-point. Pre-operative and post-operative incontinence severity is summarised in Table 1.

By the time of the questionnaire, 27(38%) patients were dry, 32(44%) had mild incontinence and 13(18%) had moderate or severe incontinence.

According to PPD, 55(76%) patients were either cured or improved and 17(24%) patients were classified as 'failed'. However, patient overall satisfaction was high with 57(79%) very much or much improved, 6(8%) somewhat improved and only 9(13%) not improved or worse.

Table 2 displays continence outcomes at the time of the questionnaire stratified by the pre-operative severity of incontinence (pad weight). Among patients with mild pre-operative incontinence, 15(48%) were dry, 15(48%) still had mild incontinence and one(3%) had developed moderate incontinence. However, 28(90%) reported being very much or much improved from their preoperative state and only 2(6%) were the same or worse. In the group of patients with moderate pre-operative incontinence, 10(32%) were dry, 16(52%) now had 'mild' incontinence and 5(16%) had moderate incontinence according to pad weight. Twenty-four(77%) patients were very much or much improved and 3(10%) were the same or worse. Patients with severe pre-operative incontinence performed significantly worse post-operatively($p=0.02$). Two(20%) were dry, 5(50%) had mild or moderate incontinence and 3(30%) had persisting severe incontinence. Patient satisfaction was also lower, with 4(40%) reporting their incontinence was the same or worse. In terms of post-operative PPD, 7(70%) were classified as 'failed'.

According to ICIQ scores, 34(47%) patients had mild incontinence at the time of follow-up, 25(35%) had moderate and 13(18%) had severe incontinence. Among the 31(43%) patients with mild pre-operative incontinence based on pad

weight, 3(10%) had severe incontinence at the time of follow-up when assessed using the ICIQ.

Supplementary Figure 1 graphs PGI-I outcomes by time since procedure. There is a trend to worse continence outcomes with increasing follow-up time, however this was not significant($p=0.08$).

In Table 3 the patient-reported level of improvement is stratified by the time since procedure, pre-operative radiotherapy and pre-operative degree of incontinence. There was a significant reduction in the proportion of patients that reported an improvement in symptoms as time progressed; among patients who had had the sling for less than four years, only one patient(3%) had not improved, whereas among those with follow-up longer than four years post-operatively, 8(20%) were the same or worse($p=0.04$).

Patients who had had prior pelvic irradiation had significantly worse continence outcomes($p=0.02$). This was despite similar pre-operative continence severity (mild 44% vs 41%, moderate 44% vs 46%, and severe 13% vs 13%) and despite longer follow-up in the non-irradiated group (median 54 months vs 37 months) The severity of pre-operative incontinence was also a predictor of outcome; 92% of patients treated for mild or moderate incontinence were improved at follow-up according to PGI-I scores, compared to 60% of men with severe pre-operative incontinence.

Discussion

The AdVance™ male urethral sling (Boston Scientific) is a minimally invasive, safe option for the treatment of post-prostatectomy stress urinary incontinence. Since its introduction in 2008, a number of international studies have reported promising results^{6 10 11}, however data on the medium to long-term efficacy is limited.

The majority of previous studies assess the success of the AdVance™ sling using improvement in daily pad use and quality of life questionnaires^{10 11 14}.

Recently two small Australian series have reported on the outcomes of the AdVance™ sling.^{15 16} Habashy et al. reviewed 50 patients with mild or moderate incontinence treated with the AdVance™ sling at a median (range) follow up time of 36(14-72) months and reported men were using an average of 1.02 pads per day (PPD), 1.84 PPD less in comparison to before their procedure. They also reported an increasing mean PPD usage with time¹⁶. Similarly, Chung et al. reported that 16 of 19 men treated with the AdVance™ sling achieved social continence (0 or 1 pad per day) at a mean follow up of 33 months¹⁵.

Also using PPD definitions, Bauer et al. reported a 'cure' rate of 51.6% and an 'improved' rate of 23.8% for a group of 137 patients at a median follow-up of 27 months¹⁴. Cornu et al. described a 'cure' rate of 62% and an 'improved' rate of 16% at a median follow-up of 21 months in a group of 136 patients with mild or moderate pre-operative incontinence¹⁰. Similarly, Rehder et al. found 53.8% of 118 patients were cured and 23.1% improved at one year post-procedure¹¹. We have presented our data in a similar fashion and our results are comparable,

with 51% cured and 25% improved at a longer median time of 52 months post-procedure, as well as including a group of patients with severe preoperative incontinence.

However, in addition to outcome definitions of continence based on daily pad use, we have also utilized objective measures of continence. It must be noted that when questioned in this fashion, continence rates reported by patients are lower. Only 38% of patients were dry according to pad weight measurements at the time of follow-up and according to ICIQ scores, 53% had moderate or severe incontinence despite treatment with the AdVance™ sling. Given that we did not collect pre-operative ICIQ scores, interpreting these post-operative scores in isolation is difficult, however there is a clear discordance with PPD outcomes. If pad weights alone are examined, almost half of the patients(48%) that had mild incontinence pre-operatively still had mild incontinence post-operatively. This emphasises the point that the sling does not represent a curative intervention in the majority of patients and that the high success rates of previous studies have been mostly based on PPD definitions.

The importance of patient-reported satisfaction outcomes in assessing the severity of incontinence, however, must not be overlooked and patient satisfaction as assessed using the PGI-I scores outperformed objective measures of continence. Fifty-seven(79%) patients felt very much or much improved at the time of follow-up, indicating that although approximately half of patients were still wearing continence pads, their quality of life had improved significantly.

This is also supported by the fact that in the follow-up period, only two patients sought insertion of an AUS to further improve urinary control.

Previous research has indicated that patients with mild or moderate incontinence may benefit most from the AdVance™ sling^{8 17} and our data is in line with this, indicating that the sling has limited efficacy in patients with severe incontinence according to objective measures of continence^{8 17}. However, when the PGI-I results are examined, 50% of patients with severe incontinence pre-operatively felt very much or much improved. Therefore, although the AdVance™ sling might not provide a cure for severe incontinence, it may still be a viable first-line option in patients who would otherwise be considered for an AUS, accepting lower success rates and with the goal of symptom improvement rather than cure. Cornu et al. prospectively evaluated a group of twelve patients who had an AUS inserted after failure of the AdVance™ sling and found there were no additional technical barriers and outcomes were comparable to those treated with an AUS as a first line procedure¹⁸. We have similarly found no significant difficulties performing salvage AUS insertion¹⁹ and our current study supports these findings.

There is limited data available for the success of the AdVance™ sling beyond three-years post-operatively. Both Rehder et al. and Bauer et al. found that continence outcomes were similar at the one-year and three-year time-points^{11 14}. Our data indicated there is likely to be a level of decline in continence with increasing time (Supplementary Figure 1 – supporting information). As seen in table 3, when patient satisfaction outcomes are considered, those less

than four years post-procedure reported a significantly greater level of improvement than those more than four years post-operatively. This result may be affected by recall bias.

Prior radiotherapy to the pelvis is another factor that impacted the success of the AdVance™ sling in our patients, and this is consistent with previously published data. Torrey et al. evaluated 37 patients treated with an AdVance™ sling and concluded that prior pelvic radiotherapy severely compromises the efficacy of the sling²⁰. Sturm et al.²¹ also found those patients with no history of pelvic radiotherapy had significantly better continence outcomes after insertion of the AdVance™ sling. Our results confirmed these findings. However, as seen in Table 3, when PGI-I outcomes are examined, 69% of patients in this group still reported improvement in their symptoms. Furthermore, it is worth noting that there was no increase in complications from the procedure in the group of patients who had prior radiotherapy.

We accept that this study has limitations. The cohort size was relatively small and follow-up was not entirely complete. Questionnaires were completed at a single point in time, rather than at the same follow-up period for each patient. ICIQ scores were not measured pre-operatively and therefore interpreting post-operative scores in isolation is difficult.

Conclusions

This series answers important questions as to the efficacy of the AdVance™ sling over medium term follow-up in different patient groups. Although our experience is consistent with previous reports that the AdVance™ sling has high success rates according to pad usage per day, when using objective measures of continence, the success rates are lower.

However, focus must be placed on patient satisfaction in the treatment of incontinence and from this point of view the AdVance™ sling offers a high rate of success for the treatment of mild-moderate post-prostatectomy incontinence, and may be considered as a first-line surgical treatment option for these men. While there is some loss of efficacy over time, the vast majority of men remained improved even when followed beyond 4 years. There is a greater chance of failure, or recurrent incontinence in men who have severe incontinence pre-operatively, or a history of prior pelvic radiation therapy and this should be taken into account when counselling patients as to their treatment options. Lowest success rates are seen in men with severe incontinence, who appear better suited to alternative treatments such as an artificial urinary sphincter, which remains the gold standard in the management of PPI.

Funding

Funding for this study was received from Boston Scientific. Boston Scientific played no role in patient selection, data acquisition, analysis or manuscript preparation.

References:

1. Litwin MS, Hays RD, Fink A, et al. Quality-of-life outcomes in men treated for localized prostate cancer. *Jama* 1995;273(2):129-35.
2. Parekh A, Feng M, Kirages D, et al. The role of pelvic floor exercises on post-prostatectomy incontinence. *The Journal of urology* 2003;170(1):130-33.
3. Papachristos A, Basto M, Marvelde L, et al. Laparoscopic versus robotic - assisted radical prostatectomy: an Australian single - surgeon series. *ANZ journal of surgery* 2015;85(3):154-58.
4. Penson DF, McLerran D, Feng Z, et al. 5-year urinary and sexual outcomes after radical prostatectomy: results from the prostate cancer outcomes study. *The Journal of urology* 2005;173(5):1701-05.
5. Bauer RM, Bastian PJ, Gozzi C, et al. Postprostatectomy incontinence: all about diagnosis and management. *European urology* 2009;55(2):322-33.
6. Bauer RM, Mayer ME, Gratzke C, et al. Prospective evaluation of the functional sling suspension for male postprostatectomy stress urinary incontinence: results after 1 year. *European urology* 2009;56(6):928-33.
7. Rehder P, Gozzi C. Transobturator sling suspension for male urinary incontinence including post-radical prostatectomy. *European urology* 2007;52(3):860-67.

8. Davies TO, Bepple JL, McCammon KA. Urodynamic changes and initial results of the AdVance male sling. *Urology* 2009;74(2):354-57.
9. Kowalik CG, DeLong JM, Mourtzinis AP. The advance transobturator male sling for post - prostatectomy incontinence: Subjective and objective outcomes with 3 years follow up. *Neurourology and urodynamics* 2015;34(3):251-54.
10. Cornu JN, Sèbe P, Ciofu C, et al. Mid - term evaluation of the transobturator male sling for post - prostatectomy incontinence: focus on prognostic factors. *BJU international* 2011;108(2):236-40.
11. Rehder P, Haab F, Cornu J-N, et al. Treatment of postprostatectomy male urinary incontinence with the transobturator retroluminal repositioning sling suspension: 3-year follow-up. *European urology* 2012;62(1):140-45.
12. Twiss CO, Fischer MC, Nitti VW. Comparison between reduction in 24 - hour pad weight, International Consultation on Incontinence - Short Form (ICIQ - SF) score, International Prostate Symptom Score (IPSS), and Post - Operative Patient Global Impression of Improvement (PGI - I) score in patient evaluation after male perineal sling. *Neurourology and urodynamics* 2007;26(1):8-13.
13. Yalcin I, Bump RC. Validation of two global impression questionnaires for incontinence. *American journal of obstetrics and gynecology* 2003;189(1):98-101.
14. Bauer RM, Soljanik I, Füllhase C, et al. Mid - term results for the retroluminal transobturator sling suspension for stress urinary incontinence after prostatectomy. *BJU international* 2011;108(1):94-98.

15. Chung E, Smith P, Malone G, et al. Adjustable versus non-adjustable male sling for post-prostatectomy urinary incontinence: A prospective clinical trial comparing patient choice, clinical outcomes and satisfaction rate with a minimum follow up of 24 months. *Neurourology and urodynamics* 2016;35(4):482-86.
16. Habashy D, Losco G, Tse V, et al. Mid - term outcomes of a male retro - urethral, transobturator synthetic sling for treatment of post - prostatectomy incontinence: Impact of radiotherapy and storage dysfunction. *Neurourology and Urodynamics* 2016
17. Cornu J-N, Sèbe P, Ciofu C, et al. The AdVance transobturator male sling for postprostatectomy incontinence: clinical results of a prospective evaluation after a minimum follow-up of 6 months. *European urology* 2009;56(6):923-27.
18. Abdou A, Cornu J, Sebe P, et al. [Salvage therapy with artificial urinary sphincter after Advance™ male sling failure for post-prostatectomy incontinence: a first clinical experience]. *Progres en urologie: journal de l'Association francaise d'urologie et de la Societe francaise d'urologie* 2012;22(11):650-56.
19. Sathianathan NJ, McGuigan SM, Moon DA. Outcomes of artificial urinary sphincter implantation in the irradiated patient. *BJU international* 2014;113(4):636-41.
20. Torrey R, Rajeshuni N, Ruel N, et al. Radiation history affects continence outcomes after advance transobturator sling placement in patients with post-prostatectomy incontinence. *Urology* 2013;82(3):713-17.

21. Sturm R, Guralnick M, Stone A, et al. Comparison of clinical outcomes between “ideal” and “nonideal” transobturator male sling patients for treatment of postprostatectomy incontinence. *Urology* 2014;83(5):1186-89.

Figure Legends

Supplementary Figure 1: PGI-I Outcomes By Time Since Procedure

Table I: Summary of Pre- and Post-operative Incontinence Severity

Continence Data		
Preoperative Incontinence Severity		
Preoperative Pad Weight		Number (%)
	Mild (<100mL/day)	31 (43)
	Moderate (100-400mL/day)	31 (43)
	Severe (>400mL/day)	10 (14)
Questionnaire* Results:		
Post-operative Pad Use		
	Cured (0 pad or security pad)	37 (51)
	Improved (≥50% reduction in PPD)	18 (25)
	Failed (<50% reduction in PPD)	17 (24)
Post-operative Pad Weight		
	Dry	27 (38)
	Mild (<100mL/day)	32 (44)
	Moderate (100-400mL/day)	10 (14)
	Severe (>400mL/day)	3 (4)
ICIQ Scores		
	Mild (0-5)	34 (47)
	Moderate (6-12)	25 (35)
	Severe (13-21)	13 (18)
Patient Satisfaction – PGI-I Scores		
	Very Much / Much improved	57 (79)
	Somewhat Improved	6 (8)
	Same / Worse	9 (13)

*Questionnaire conducted at a mean (range) follow-up time of 52 (18-89) months post-operatively

Table II: Outcomes According to Pre-operative Degree of Incontinence

	Mild (%) n=31	Moderate (%) n=31	Severe (%) n=10
Post-operative Pad weight			
Dry	15 (48)	10 (32)	2 (20)
Mild (<100mL/day)	15 (48)	16 (52)	1 (10)
Moderate (100-400mL/day)	1 (3)	5 (16)	4 (40)
Severe (>400mL/day)	0 (0)	0 (0)	3 (20)
Post-operative Pad Use			
Cured (0 pad or security pad)	19 (61)	16 (52)	2 (20)
Improved (≥50% reduction in PPD)	9 (29)	8 (26)	1 (10)
Failed (<50% reduction in PPD)	3 (10)	7 (23)	7 (70)
ICIQ Scores			
Mild (0-5)	17 (55)	13 (42)	3 (30)
Moderate (6-12)	11 (35)	13 (42)	2 (20)
Severe (13-21)	3 (10)	5 (16)	5 (50)
Overall Satisfaction – PGI-I scores			
Very Much / Much improved	28 (90)	24 (77)	5 (50)
Somewhat Improved	1 (3)	4 (13)	1 (10)
Same / Worse	2 (6)	3 (10)	4 (40)

Table III: PGI-I Outcomes

PGI-I Outcomes according to:	Number (%)	p-value
Previous Irradiation (XRT)		p=0.02
XRT (n=16)		
Improved	11 (69)	
Same / Worse	5 (31)	
No XRT (n= 56)		
Improved	52 (84)	
Same / Worse	4 (16)	
Time since procedure		p=0.04
< 4 years (n = 32)		
Improved	31 (97)	
Same / Worse	1 (3)	
≥ 4 years (n =40)		
Improved	32 (80)	
Same / Worse	8 (20)	
Pre-operative Incontinence		p=0.02
Mild / Moderate (n = 62)		
Improved	57 (92)	
Same / Worse	5 (8)	
Severe (n = 10)		
Improved	6 (60)	
Same / Worse	4 (40)

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Title:

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Date:

2018-03-01

Citation:

Papachristos, A., Mann, S., Talbot, K. & Moon, D. (2018). AdVance male urethral sling: medium-term results in an Australian cohort. ANZ JOURNAL OF SURGERY, 88 (3), pp.E178-E182. <https://doi.org/10.1111/ans.13890>.

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