

SAFETY OF SYNCHRONOUS PENILE PROSTHESIS AND ARTIFICIAL URINARY SPHINCTER IMPLANTATION

Eric Kirshenbaum*, Parth Patel, Marc Nelson, Petar Bajic, Kevin McVary, Larissa Bresler, Ahmer Farooq, and Christopher Gonzalez

Loyola University Medical Center
Department of Urology

PD20-02



Preparing people to lead extraordinary lives

BACKGROUND

Severe Incontinence Rates

8.4% of men experience prolonged, severe incontinence at 18 months



<https://westemhernot.com/2019/07/06/lets-talk-about-urinary-incontinence/>

Erectile Dysfunction

24 month ED rate 6-37%



Ficarra, Vincenzo, Giacomo Noyara, Thomas E. Ahlering, Anthony Costello, James A. Eastham, Markus Graefen, Giorgio Guazzoni, et al. 2012. "Systematic Review and Meta-Analysis of Studies Reporting Potency Rates after Robot-Assisted Radical Prostatectomy." *European Urology* 62 (3): 418–30.

Resnick, Matthew J., Tatsuki Kovama, Kano-Hsien Fan, Peter C. Albertsen, Michael Goodman, Ann S. Hamilton, Richard M. Hoffman, et al. 2013. "Long-Term Functional Outcomes after Treatment for Localized Prostate Cancer." *The New England Journal of Medicine* 368 (5): 436–45.

Sacco, Emilio, Tommaso Prayer-Galetti, Francesco Pinto, Simonetta Fracalanza, Giovanni Betto, Francesco Paoano, and Walter Artibani. 2006. "Urinary Incontinence after Radical Prostatectomy: Incidence by Definition, Risk Factors and Temporal Trend in a Large Series with a Long-Term Follow-Up." *BJU International*. <https://doi.org/10.1111/j.1464-410x.2006.06185.x>

Stanford, J. L., Z. Feno, A. S. Hamilton, F. D. Gilliland, R. A. Stephenson, J. W. Eley, P. C.

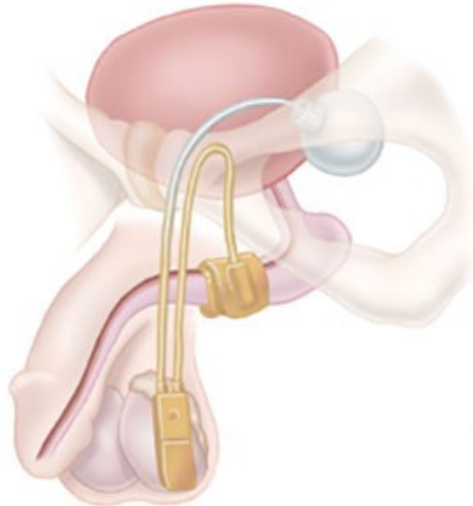


Preparing people to lead extraordinary lives

BACKGROUND

AUS

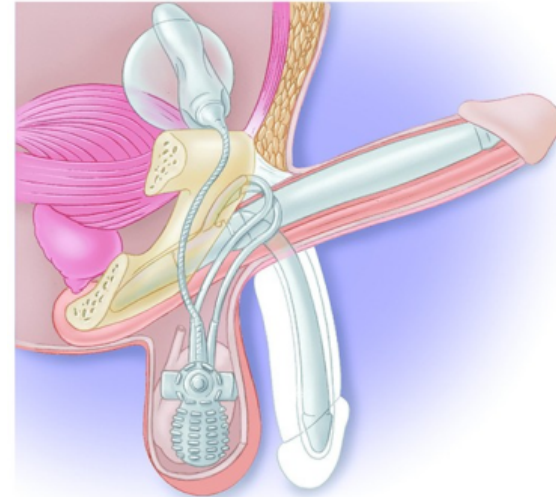
3.6% of patients go on to AUS
at median of 23.5 months



<https://www.bostonscientific.com/>

IPP

1-2% of post-prostatectomy men go on to IPP



<https://www.bostonscientific.com/>

[Stephenson, Robert A., Motomi Mori, Yi-Ching Hsieh, Tomasz M. Beer, Janet L. Stanford, Frank D. Gilliland, Richard M. Hoffman, and Arnold L. Potosky. 2005. "Treatment of Erectile Dysfunction Following Therapy for Clinically Localized Prostate Cancer: Patient Reported Use and Outcomes from the Surveillance, Epidemiology, and End Results Prostate Cancer Outcomes Study." *The Journal of Urology* 174 \(2\): 646–50; discussion 650.](#)

[Nelson, Marc, Ryan Dornbier, Eric Kirshenbaum, Emanuel Eguia, Patrick Sweigert, Marshall Baker, Ahmer Farooq, et al. 2020. "Use of Surgery for Post-Prostatectomy Incontinence." *The Journal of Urology* 203 \(4\): 786–91.](#)

[Tal, Raanan, Lindsay M. Jacks, Elena Elkin, and John P. Mulhall. 2011. "Penile Implant Utilization Following Treatment for Prostate Cancer: Analysis of the SEER-Medicare Database." *The Journal of Sexual Medicine* 8 \(6\): 1797–1804.](#)



Preparing people to lead extraordinary lives

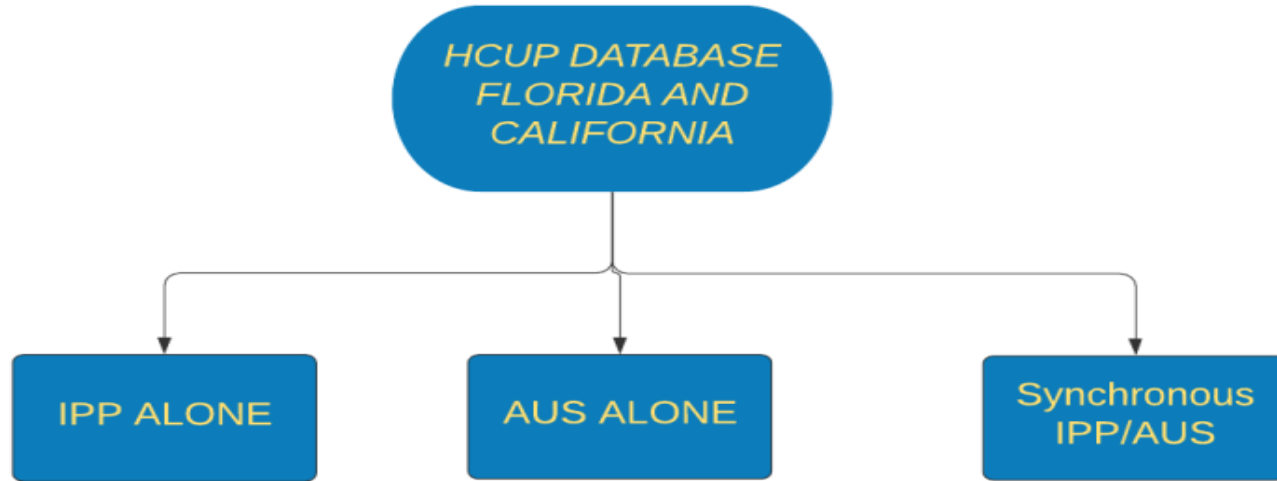
Purpose

Synchronous penile prosthesis (PP) and artificial urinary sphincter (AUS) implantation for the treatment of erectile dysfunction (ED) and stress urinary incontinence allows for avoidance of a secondary surgical procedure. The purpose of our study was to assess the safety and efficacy of synchronous PP and AUS implantation.



METHODS

- The Healthcare Cost and Utilization Project State Inpatient and Ambulatory Databases for California (2007-2011) and Florida (2009-2014) were utilized.
- Patients were identified as having undergone AUS, IPP or combined AUS/IPP by ICD-9 and CPT codes.



Methods

- We compared outcomes in patients undergoing combination AUS/IPP versus those undergoing PP or AUS alone.
- Outcomes of interest
 - 90-day readmissions.
 - 90-day ER visits
 - Surgical complications
 - 90-day device complications.



Results Summary

1. A total of **20,593** patients were identified who underwent IPP or AUS,
2. **245** underwent combined IPP and AUS.
3. Outcomes of interest:
 - **90-day readmissions:** Higher 90-day readmission rates compared to IPP or AUS alone (**13.9% vs 7.2%, $p < 0.001$**)
 - **90-day ER visits:** No difference
 - **Surgical complications:** more likely to have minor/moderate complications (**8.89% vs 2.35%, $p < 0.001$**)
 - **90-day device complications:** Higher rates of device complications within 90 days (**6.1% vs 3.4%, $p = 0.021$**).



		Combined IPP/AUS	IPP only	p value	AUS only	p value
Total		245	17031		3317	
Age(mean)		67.2 (SD 8.3)	65.7	0.024	70.5	0.000
Race				0.000		0.000
	White	63.7	49.8		73.3	
	African American	12.7	8.9		6.0	
	Hispanic	16.3	34.1		10.7	
	Other	7.4	7.1		10.1	
Insurance				0.017		0.000
	Medicare	60.8	69.1		73.6	
	Medicaid	0.4	0.6		0.9	
	Private	35.5	26.0		22.6	
	Uninsured	0.8	1.6		1.5	
	Other	2.5	2.8		1.4	
Income				0.163		0.724
	1st Quartile	28.0	37.6		28.3	
	2nd Quartile	34.8	30.1		32.8	
	3rd Quartile	28.8	23.5		27.0	
	4th Quartile	8.5	8.8		11.8	



	Combined IPP/AUS(%)	IPP or AUS alone(%)	p value	IPP alone(%)	p value	AUS alone(%)	p value
Total	245	20348		17031		3317	
30 day readmit	2.0	2.6	0.564	2.4	0.702	3.7	0.170
60 day readmit	5.7	3.8	0.110	3.4	0.045	5.7	0.991
90 day readmit	4.9	4.1	0.539	3.7	0.336	6.1	0.438
180 day readmit	13.9	7.2	<0.01	6.5	<0.01	11.1	0.179
Device Complication 90 day	6.1	3.4	0.021	3.1	0.006	5.3	0.569
Minor/Moderate Complications	8.89	2.35	<0.01	0.93	<0.01	9.6	0.732
Major Complications	0.41	0.6	0.751	0.5	0.832	0.84	0.464

Conclusions

Synchronous PP and AUS implantation is feasible, but is associated with higher readmission rates, 90-day device complications and surgical complications. Caution should be considered in this higher risk population.

