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MP03-03 FRAILITY IN MEN UNDERGOING PROSTHETIC UROLOGIC PROCEDURES ASSOCIATES WITH POST-OPERATIVE SEPSIS, CARDIOVASCULAR COMPLICATIONS, AND DISCHARGE TO CONTINUED CARE

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Peer reviewed

Urodynamics/Lower Urinary Tract Dysfunction/ Female Pelvic Medicine: Male Incontinence

Moderated Poster 3

Friday, May 3, 2024

7:00 AM-9:00 AM

MP03-02

UNVEILING THE LONG-TERM SURVIVAL OUTCOMES OF ARTIFICIAL URINARY SPHINCTER: A TWELVE-YEAR STUDY FROM THE FRENCH NATIONAL HEALTH INSURANCE DATABASE

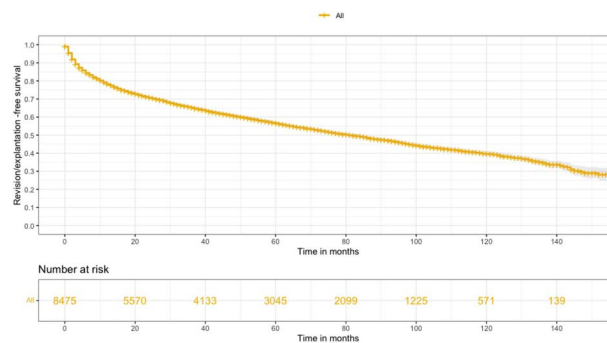
Louis Lenfant*, Yoann Taille, Emmanuel Chartier-Kastler,
Bertrand Lukaks, Aurélien Beaugerie, Eric Vicaut, Pierre C. Mozer, Paris,
France

INTRODUCTION AND OBJECTIVE: The artificial urinary sphincter (AUS) is the gold standard for treating severe male urinary stress incontinence, often due to radical prostate cancer (PCa) treatment or surgical procedures for benign prostatic hyperplasia (BPH). However, data on AUS revision and explantation rates are scarce.

METHODS: Data regarding patients treated in France for PCa or BPH from 2006-2018 were extracted from the French national health data system and stored in the Observapur database. From this dataset, we identified patients who underwent their first AMS 800 AUS implantation, using its unique reimbursement code, as AMS is the only AUS eligible for reimbursement in France. The study aimed to evaluate reintervention-free survival following the first AUS implantation, including device revision or explantation identified by specific codes.

RESULTS: Between 2006 and 2018, the Observapur database registered 5,132,311 patients, with 4,413,951 treated for BPH and 718,360 for PCa in France. In that period, there were 780,127 BPH surgeries, 266,927 radical prostatectomies, and 118,611 PCa radiation therapies. AUS implantation rates were 1.8% after radical prostatectomy and 0.28% after BPH surgery. Out of the total, 8,475 patients received their first AUS implantation between 2006 and 2018. The median age at implantation was 69 (IQR 65-74), with a median follow-up of 6 years (IQR 3-9). Of these, 68% had AUS implantation post-radical prostatectomy, 4.5% post-radiation therapy, 8.1% after both, and 19% post-BPH surgery. At the 10-year mark: 40% had not undergone reintervention, with 20% of reinterventions occurring within 10 months and a median of 6.5 years to reintervention. 67% had not undergone revision. 62% had not experienced explantation, with 12.5% of explantations happening within the first year.

CONCLUSIONS: From 2006-2018 in France, 8,475 patients had AUS implantation, representing the largest AUS cohort to date with the longest follow-up. Most patients had AUS post-PCa treatment or BPH surgery. The initial post-implantation months had the highest reintervention risk. Ten years after implantation, 33% of AUS implants needed revision, 38% required explantation, and 60% needed reintervention.



Source of Funding: None

MP03-03

FRAILITY IN MEN UNDERGOING PROSTHETIC UROLOGIC PROCEDURES ASSOCIATES WITH POST-OPERATIVE SEPSIS, CARDIOVASCULAR COMPLICATIONS, AND DISCHARGE TO CONTINUED CARE

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Kevin D. Li, Hiren Patel, Benjamin N. Breyer, San Francisco, CA

INTRODUCTION AND OBJECTIVE: Frailty has yet to be explored as a risk factor for urologic prosthetics post-operative complications. Our objective is to assess the impact of modified frailty index-5 (mFI-5) on post-surgery outcomes in patients undergoing urologic prosthetic procedures.

METHODS: National Surgical Quality Improvement Program (NSQIP) 2015-2020 were reviewed. Male patients undergoing artificial urinary sphincter (AUS), urethral sling procedures and penile prosthesis (PP) were identified using CPT codes. The mFI-5 was calculated by assigning one point for each comorbidity present: diabetes, hypertension, congestive heart failure, chronic obstructive pulmonary disease, and functionally dependent health status. Outcomes included morbidity (presence of any complication), mortality, Clavien grade 4/5 complications, prolonged length of stay (PLOS), operative time (OT), readmission, reoperation, discharge to continued care (DCC) and healthcare resource utilization (HU) (composite of PLOS, readmissions, DCC and reoperation).

RESULTS: 3,608 patients (AUS 63.3%; Sling 25.7%; penile prosthesis 11.0%) were identified. Mean age was 69.2, and 21.7% of patients were very frail (mFI-5 \geq 2). Frailty (mFI-5 \geq 2 vs $<$ 2) was significantly associated with post-operative sepsis (OR 2.26; 1.02-5.00; $p=0.044$), cardiovascular complications (OR 4.33; 1.32-14.2, $p=0.016$), DCC (OR 6.5; 2.18-19.5; $p<0.001$) and OT (OR 1.01; 1.01-1.01; $p<0.001$). Frailty was not associated with overall morbidity, PLOS, reoperation, healthcare utilization, Clavien Grade 4/5 complications or mortality.

CONCLUSIONS: Our study shows frailty in adults receiving urologic prostheses is associated with greater odds of post-operative sepsis and cardiovascular complications. Additional research is warranted to investigate interventions aimed at optimizing the well-being of frail patients.

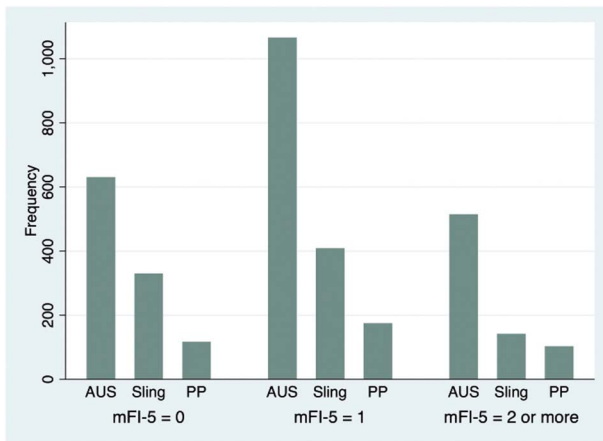


Figure 1. Frailty score by type of surgery

Source of Funding: N/A

MP03-04

THE IMPACT OF FRAILITY ON SURGICAL OUTCOMES FOLLOWING MALE STRESS URINARY INCONTINENCE SURGERY: A NATIONAL STUDY OF MEDICARE BENEFICIARIES

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INTRODUCTION AND OBJECTIVE: Stress urinary incontinence (SUI) is a common complication after treatment for prostate cancer. Subsequent SUI surgery, including artificial urinary sphincter (AUS) and male urethral sling placement, is commonly performed in older men, many of whom are also frail. Frailty, a state of decreased physiologic reserve and function, has been shown to increase the risk of AUS removal and post-operative complications. This study examined the association between frailty and postoperative complications and procedure revisions in men undergoing AUS and male urethral sling placement.

METHODS: This is a retrospective cohort study of 100% fee-for-service Medicare beneficiaries ages 66 years and older who underwent AUS or male urethral sling placement between 2014-2016. Baseline frailty was quantified for each subject using the Claims-Based Frailty Index (CFI), a validated measure of frailty in Medicare data, and comorbidity was quantified using the Charlson comorbidity index (CCI). Subjects were categorized as not frail ($CFI < 0.15$), pre-frail ($0.15 \leq CFI < 0.25$), and mildly-to-severely frail ($CFI \geq 0.25$). Primary outcomes were 30-day post-operative complications and AUS/male urethral sling removal or revision.

RESULTS: In total, 7252 beneficiaries underwent SUI surgery: 2739 underwent male urethral sling placement and 4514 underwent AUS. Beneficiaries were not frail ($N=3936$, 54.27%), pre-frail ($N=2995$, 41.3%) and mildly-to-severely frail ($N=321$, 4.43%). Increased risk of 30-day post-operative complications was associated with pre-frail and mildly-to-severely frail compared to not frail (RR 1.47, $p < 0.001$ and RR 2.46, $p < 0.001$, respectively), age ≥ 75 years compared to 65-74 years (global p -value < 0.001), and $CCI \geq 1$ compared to 0 (global p -value < 0.001). Beneficiaries who were pre-frail (RR 1.17, $p=0.03$) and mildly-to-severely frail (RR 1.31, $p=0.04$) or age ≥ 75 years compared to age 65-74 (global p -value=0.0002) were at significantly higher risk of AUS or sling revision or removal within 1 year, though this was not associated with CCI (global p -value=0.2).

CONCLUSIONS: Among beneficiaries undergoing surgery for male SUI, frailty, age, and comorbidity were significantly associated with 30-day surgical complications, but only age and frailty were associated with AUS/male urethral sling revision and removal. These findings suggest that frailty is an important factor in the preoperative

assessment of patients undergoing consideration for male SUI surgery and may be a predictor of adverse surgical outcomes.

Source of Funding: NIH-NIA R01AG058616, R38AG070171

MP03-05

DEVELOPMENT, IMPLEMENTATION, AND IMPACT OF AN ELECTRONIC MEDICAL RECORD ALERT SYSTEM FOR IMPLANTED ARTIFICIAL URINARY SPHINCTERS

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INTRODUCTION AND OBJECTIVE: The artificial urinary sphincter (AUS) is the gold standard surgical option for post-prostatectomy stress urinary incontinence. The presence of an implanted AUS may be overlooked due to a general lack of awareness, particularly outside of urologic contexts (e.g. emergency department, operating room). Inadvertent traumatic urethral catheterization without device deactivation can occur in these settings and may result in cuff erosion. A hard-stop best practice advisory was created in the electronic medical record to alert when any male patient with an implanted AUS presents for any surgical procedure, to a urology office, or an order is placed in any care setting for insertion of a urethral catheter. This AUS alert system (AUS-AS) was implemented on 4/25/2022. Here, we evaluate its utilization and impact on patient outcomes.

METHODS: All AUS insertions, revisions, removal/replacements, and explants from 8/1/2016-9/30/2023 were analyzed. All re-operations were reviewed to identify cuff erosions directly preceded by catheterization through an activated AUS cuff. Event rates (e.g. re-operations, explants, cuff erosions) in the pre-AUS-AS versus post-AUS-AS time frames were compared using cumulative device exposure years (EY) (i.e., total years of implant duration of all AUS devices in a given period) to account for differences in exposure time between the two time periods. Key variables were defined in SPSSv26 and compared using MedCalc's test of two rates based on Poisson distribution.

RESULTS: 213 unique implants were identified in 194 patients (Table 1). The AUS-AS has fired 2,425 times since implementation, firing for a median of 36 unique patients per month. A total of 25 AUS explant cases occurred; 22 (.06/EY) pre-AUS-AS and 3 (.01/EY) post-AUS-AS ($p=0.01$). 19 out of 25 (76%) explants were due to cuff erosion. 10 out of 19 (53%) cuff erosions were directly preceded by catheterization through an activated cuff, all 10 (.03/EY) of which occurred prior to AUS-AS implementation (relative risk reduction 1.00, $p=0.02$).

CONCLUSIONS: Since implementation of the AUS-AS, no patient required AUS explant due to cuff erosion secondary to trauma sustained during inadvertent catheterization. Our novel AUS-AS has strong implications for improving patient safety after AUS implantation.