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### Title

PD37-07 OUTCOMES AND RISK FACTORS OF REVISION AND REPLACEMENT ARTIFICIAL URINARY SPHINCTER IMPLANTATION IN RADIATED AND NON-RADIATED PATIENTS

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**PD37-06**  
**LOW SERUM TESTOSTERONE IS ASSOCIATED WITH ARTIFICIAL URINARY SPHINCTER CUFF EROSION**

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**INTRODUCTION AND OBJECTIVE:** Low serum testosterone is common among men with stress incontinence and has been proposed as a risk factor for AUS cuff erosion. We sought to further evaluate the relationship between serum testosterone levels and AUS cuff erosion in a large population of incontinent men who underwent AUS placement.

**METHODS:** A retrospective analysis of a large, single-surgeon database was performed to identify men with documented testosterone levels who underwent AUS implantation between 2008 and 2019. Men were stratified into two groups based on serum testosterone: low T (<280ng/dL) or normal T (>280ng/dL). The primary outcome of interest was the incidence of and time to spontaneous urethral cuff erosion. We excluded men with iatrogenic erosion. Multivariate analysis was performed to control for established risk factors (prior AUS surgery, coronary artery disease, prior radiation therapy).

**RESULTS:** 723 men underwent AUS placement during the study period. Among them, we identified 151 men with testosterone levels available for review. 77 (51%) men had low serum T (mean 115.7 ng/dL, median 117.9 ng/dL) and 74 (49%) had normal serum T (mean 464.1 ng/dL, median 399.9 ng/dL). Of 29 men (19.2%) having spontaneous cuff erosion (median 7.2 months after surgery), 21 (72.4%) were hypogonadal versus 56/122 (45.9%) in the non-erosion cohort (Figure 1, p=0.013). Men with low T were three times as likely to suffer AUS erosion than men with normal T (OR=3.0, 95% CI 1.23–7.30). Time to erosion was the same (median 9.5 months vs. 6 months, p=0.53). While a history of prior AUS surgery or coronary artery disease were both significantly associated with cuff erosion on univariate analysis, only low serum testosterone level was independently associated with AUS erosion in a multivariable model (p=0.007).

**CONCLUSIONS:** Men with low serum testosterone are more likely to present with AUS cuff erosion than eugonadal men. Time to cuff erosion is no different among men with low T and men with normal T. Further research is needed to elucidate whether the risk of AUS erosion can be mitigated by testosterone replacement without compromising oncologic survival.

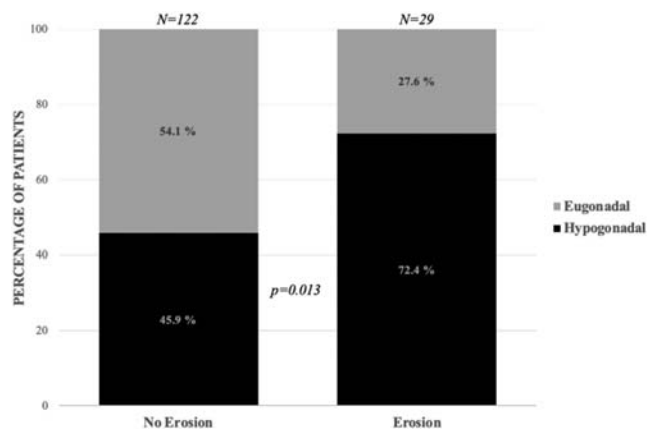


Figure 1: Incidence of Low T in men who suffered AUS cuff erosion.

Source of Funding: None

**PD37-07**  
**OUTCOMES AND RISK FACTORS OF REVISION AND REPLACEMENT ARTIFICIAL URINARY SPHINCTER IMPLANTATION IN RADIATED AND NON-RADIATED PATIENTS**

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**INTRODUCTION AND OBJECTIVE:** Risk factors for complications after artificial urinary sphincter (AUS) surgery include a history of pelvic radiation and prior AUS complication. The survival of subsequent AUS in the setting of prior device complication and radiation is not well described. We report the survival of redo AUS surgery and identify risk factors for repeat complications.

**METHODS:** A multi-institutional database was queried for redo AUS surgeries. The primary outcome was median survival of a second and third AUS in radiated and non-radiated patients. A Cox proportional hazards survival analysis was performed to identify additional patient and surgery risk factors and estimate survival adjusted for covariates.

**RESULTS:** The median time to explantation of the initial AUS in radiated (n=150) and non-radiated (n=174) patients was 26.4 and 35.6 months respectively (p=0.043). For a second device, the median time to explantation was 30.1 and 38.7 months (p=0.034), and for a third device it was 28.5 and 30.6 months (p=0.020). Cox regression analysis estimated the 5-year revision free survival for patients undergoing a second AUS with no risk factors, history of radiation, history of urethroplasty, and both a history of radiation and urethroplasty to be 83.1%, 72.6%, 63.9%, and 46% respectively.

**CONCLUSIONS:** Patients without additional risk factors undergoing 2<sup>nd</sup> and 3<sup>rd</sup> AUS surgeries experience similar revision free rates to their initial AUS devices. Patients who have been treated with pelvic radiation have earlier AUS complications. When multiple risk factors exist, revision free rates decrease significantly.

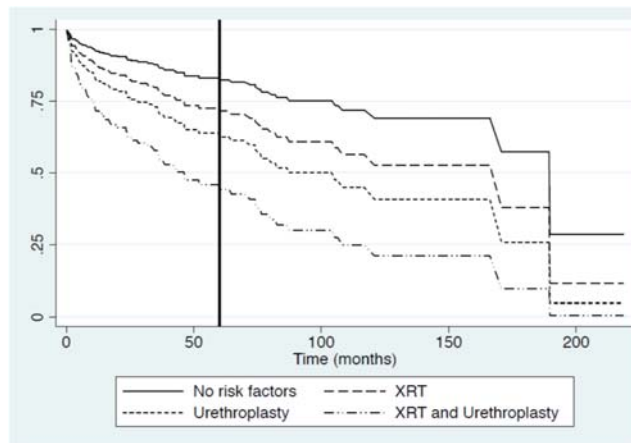


Figure 1: Estimated survival of second AUS based on Cox regression of risk factors included in the multivariable model. The curves are for a standard 4cm cuff. The solid vertical line is at 60 months for reference.

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