Does Radiation Therapy Impact Outcomes on Individuals Undergoing Revision Artificial Urinary Sphincter Surgery?

Madeleine G. Manka, Brian J. Linder, Laureano J. Rangel, Daniel S. Elliott

Department of Urology

Mayo Clinic, Rochester, MN

Introduction

- Previous reports on the effect of radiation therapy on primary artificial urinary sphincter (AUS) device survival have met with conflicting results, and data evaluating this after revision surgery is sparse.
- We sought to evaluate AUS device outcomes after revision surgery at Mayo Clinic , and compare them among individuals who did and did not undergo prior radiation therapy

Methods

- Of 2,321 AUS procedures performed at Mayo Clinic from 1983-2016, we specifically retrospectively reviewed 527 patients who underwent AUS revision surgery
- Device survival endpoints, including overall survival, infection/erosion, urethral atrophy and device malfunction were evaluated
- Overall device survival (any repeat surgery) was compared between groups , stratified by radiation status, via Kaplan-Meier method
- Proportional hazard regression and competing risk analysis were used to evaluate association between radiation and device outcomes

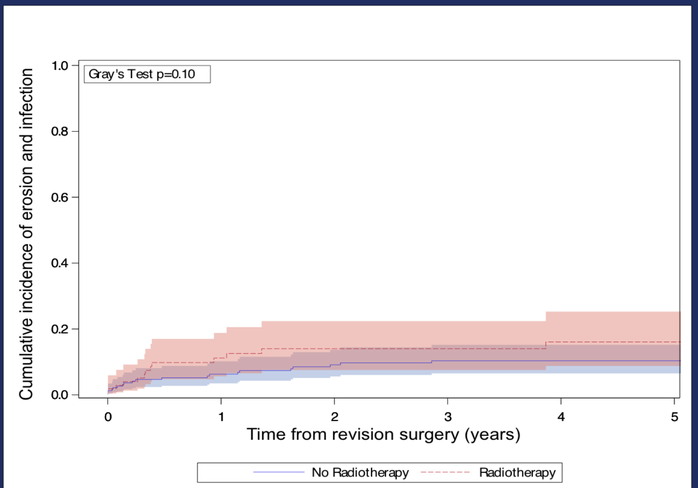
Clinical Features

Variables	No Radiation N= 354	Radiation N= 172	p value
Mean age	73.8	73.1	0.4
BMI	28.2	28.9	0.06
Diabetes Mellitus	28	29	0.05
Prior ADT	13	34	<0.001
Current or prior smoker	106	66	0.9
Prior radical prostatectomy	298	134	0.06
Hypertension	115	95	<0.001

Results

- Median follow-up for the cohort was 2.4 years
- 173 (33%) of our patients that had revision surgery had undergone radiation treatment
- Patients with prior radiation were more likely to have DM & HTN
- Exposure to prior radiation therapy was not associated with a significant difference in 5-year overall device survival (50% vs 64%; p=0.08)
- There was no significant difference in device outcomes, including: infection/erosion (p=0.11), malfunction (p=0.18), and urethral atrophy (p=0.57)

Incidence of Erosion/Infection



Conclusions

- Prior radiotherapy was not associated with an increased risk of adverse overall device survival or the rate of revision for atrophy, erosion/infection, or malfunction
- These findings may be helpful when counseling patients regarding outcomes after AUS revision.

@MayoUrology @madeleinemanka