varenicline may differ in individuals and across groups, thus, binding effects and the propensity for adverse effects may differ in individuals.

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Artificial urinary sphincter (AUS) placement after failed urethral sling: Impact of sling removal and proximal cuff placement

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OBJECTIVES/SPECIFIC AIMS: Perineal urethral sling placement is an option for men with mild to moderate post-prostatectomy stress urinary incontinence (SUI). However, men with persistent incontinence after sling placement often require secondary artificial urinary sphincter (AUS) placement, made difficult by the sling occupying the proximal bulbar urethra. This proximal section has a thicker corpus spongiosum which may mitigate cuff-induced ischemia and subsequent urethral atrophy. The authors report a series of AUS placements after failed sling, using sling revision or removal to access the proximal urethra. METHODS/STUDY POPULATION: Cutting the sling arms during urethral cuff placement increased urethral exposure and mobility. If feasible, completely removing the sling allowed the most proximal cuff site; but if dissection was felt unsafe, the mesh was left in situ and the cuff placed distally. This study is a retrospective cohort design of patients with SUI who underwent AUS placement after failed sling from 2010 to 2016. Variables included baseline patient characteristics, SUI severity, intraoperative variables, and postoperative outcomes. AUS failure, defined as infection, erosion or urethral atrophy, was analyzed at 12 and 96 months using univariate and multivariable logistic regression. RESULTS/ANTICIPATED RESULTS: Over the study period, 29 patients underwent AUS placement after failed sling. At the time of AUS placement, mean urethral circumference was 6.2 cm and 68% of patients had a 4.5 cm cuff placed; no cases required a 3.5 cm cuff. Seventy-three percent of cases were after transobturator sling placement (27% bone-anchored) and 45% of slings were explanted. AUS failure rate at 12 and 96 months was 17.8% and 45%, respectively; atrophy was the most common indication. Prior transobturator sling placement had lower rates of both 12 month (9.1% vs. 57%, $p = 0.006$) and 96 month (36% vs. 71%, $p = 0.11$) failure, though the latter was not statistically significant. Sling explant was not a significant predictor of 12 month ($p = 0.12$) or 96 month failure ($p = 0.17$). DISCUSSION/SIGNIFICANCE OF IMPACT: Sling revision during AUS placement helps expose the wider proximal urethra, allowing larger cuff size placement. This procedure appears safe, with low rates of erosion and short-term failure—albeit with high rates of long-term urethral atrophy possibly due to more significant dissection causing devascularization. However, sling removal was not a significant predictor of failure. The transobturator sling's smaller profile may result in less trauma to urethra—possibly explaining the improved outcomes.

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Incidence of T3a up-staging and survival after partial nephrectomy: Size-stratified rates and implications for prognosis

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OBJECTIVES/SPECIFIC AIMS: Due to increased experience and favorable outcomes, the use of partial nephrectomy (PN) to treat renal cell carcinoma has grown in the past decade, with expansion to larger tumors. Performing PN for larger tumors could potentially increase the number of patients up-staged to pT3a after surgery, who may have instead been treated with radical nephrectomy (RN), if known preoperatively. We aimed to estimate the proportion of patients up-staged to T3a disease after PN stratified by size. We also compared size-stratified survival outcomes of up-staged patients to those with T1a, T1b, or T2 kidney cancer. METHODS/STUDY POPULATION: From 1998 to 2013, patients undergoing PN or RN were identified from Surveillance Epidemiology and End Results registries. The proportion of patients receiving PN found to have pT3a disease was quantified by size. Cox proportional hazards models compared cancer-specific (CSS) and overall survival (OS) for PN patients with pT1a, pT1b, and pT2 disease with appropriately size-stratified pT3a patients. Also, PN patients with pT3a disease were compared to size-stratified RN patients with pT3a disease. Comparisons by size were performed within pT3a patients receiving PN. RESULTS/ANTICIPATED RESULTS: From a total of 28,854 patients undergoing PN, the estimated proportion up-staged to pT3a increased along with increasing tumor size: 4.2% for T1a, 9.5% for T1b, and 19.5% for T2. Among patients receiving PN, adjusted survival analysis demonstrated worse CSS for up-staged pT3a patients Versus appropriately stratified pT1a (CSS: HR = 1.87, $p = 0.02$), pT1b (CSS: HR = 1.91, $p = 0.01$), and pT2 (CSS: HR = 2.33, $p = 0.01$) patients. However, when assessing OS, only the size-stratified comparison of up-staged pT3a Versus pT1a disease demonstrated worse OS for the up-staged cohort (OS: HR = 1.25, $p = 0.04$). Comparing PN and RN for pT3a disease, size-adjusted analysis revealed no statistical difference in CSS or OS. Lastly, among patients undergoing PN with pT3a disease, patients with larger tumors, measuring 4–7 cm (CSS: HR = 2.83, $p < 0.01$; OS: HR = 1.44, $p = 0.04$) or 7–16 cm (CSS: HR = 8.22, $p < 0.01$; OS: HR = 2.64, $p < 0.01$), experienced worse survival than those with smaller pT3a tumors, <4 cm. DISCUSSION/SIGNIFICANCE OF IMPACT: A greater proportion of patients appear to experience T3a up-staging after PN with increasing initial T stage. Up-staged pT3a patients have worse cancer specific survival after PN compared to those with similarly sized localized tumors. Furthermore, the up-staged pT3a patients after PN appear to experience similar survival to pT3a patients undergoing RN. However, pT3a patients undergoing PN had worse survival with increasing tumor size, reinforcing the need for improvements in preoperative staging and identifying patients at risk of up-staging.

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