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MP06-14 MULTIVARIABLE OUTCOMES MODEL FOR BULBAR URETHROPLASTY SHOWS ACTIVE SMOKING IS PROTECTIVE AGAINST FUNCTIONAL SURGICAL FAILURE

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surgery. AUS removal is undertaken within 2 weeks of erosion detection, or within 72 hours if there is concomitant infection. The AUS is removed in the standard way. Urethral defects are not surgically repaired and are left to heal over a 14F catheter for 3-4 weeks before pericatheter urethrogram to ensure urethral healing. Follow-up entails retrograde urethrogram (RUG) at 3 and 12 months post AUS removal. Where narrowing is seen on RUG, cystoscopy is performed with a 17F cystoscope. Stricture was defined as the inability to pass a cystoscope to the bladder neck. We reviewed our prospective database and identified 41 patients who had urethral erosion requiring bulbar AUS removal from January 2006 to July 2018. Median time from implant to explant was 8 months (range 15 days – 19 years). 36 patients (86%) were evaluable with at least 1 year follow-up, and 3 and 12 month post-operative RUG. Mean age was 67 years (range 30 – 87 years). Indications for AUS included 26 patients with incontinence following prostate cancer treatment, 14 of whom had had radiotherapy (RTX). The remaining 10 patients had various benign disorders. 27 devices were primary implants, 7 were redo and 2 were replacements.

RESULTS: Erosion severity was described as percentage of urethral circumference affected: 10% (n=6), 25% (n=8), 50% (n=7), 100% (n=1) or “not recorded” (n=14). Two patients (5.6%) developed a urethral stricture after AUS removal. The first patient had 50% erosion, on a background of prostatectomy and RTX for prostate cancer. The second patient had 100% erosion, on a background of prior urethral reconstruction for pelvic fracture urethral injury. 22 patients (61%) had subsequent redo AUS implantation at a minimum of 6 months post explant.

CONCLUSIONS: We demonstrate low urethral stricture rates by leaving a catheter alone when removing an AUS for erosion. Prompt AUS removal after diagnosis of erosion may help minimise the risk of urethral stricture.

Source of Funding: Nil

MP06-14 MULTIVARIABLE OUTCOMES MODEL FOR BULBAR URETHROPLASTY SHOWS ACTIVE SMOKING IS PROTECTIVE AGAINST FUNCTIONAL SURGICAL FAILURE

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INTRODUCTION AND OBJECTIVE: Smoking cessation prior to surgery is encouraged to minimize cardiac and pulmonary anesthetic risk, but also to improve wound healing, as the nicotine in cigarette smoke decreases microvascular blood supply. Still, many patients will not heed this advice and will smoke up to and throughout surgery. The focus in this study was to determine how active smoking affects urethroplasty outcomes.

METHODS: A large multi-institutional database was used to identify patients that underwent anterior urethroplasty for bulbar urethral stricture disease (bUSD). Patients with bUSD in prior hypospadias repair sites or from lichen sclerosus were excluded. A generalized linear mixed model was created to predict surgical functional failure (need for secondary procedure for recurrence) after single-stage orthotopic urethroplasty. The following variables were included: bUSD length (cm), location (proximal(S1a)/distal(S1b), etiology, endoscopic dilation/incision counts (n), age (years), and smoking status (never/former and active – with former defined as quit >1 month before surgery). Leak rates and wound complications were also assessed.

RESULTS: There were 1,464 men that underwent urethroplasty for bUSD, of which 150 (10.2%) were active smokers. The overall failure rate was 8.5%. Factors significantly associated with failure included length (OR 1.3, per cm) and etiology: failed urethroplasty (E3b; OR 2.2), and radiation (E3c; OR 5.3). Active smoking was strongly protective (OR 0.2; overall smoker recurrence rate 3%). The overall leak rate was 2.9% (n=42), which was higher in smokers (6% v. 2.5%; p=0.03). The wound infection rates were similar (2.7% v. 1.3%; p=0.3). Smoking did not affect urethroplasty type when controlling for stricture length (p=0.84).

CONCLUSIONS: Active smoking significantly increases the odds of functional success (OR 4.2; p=0.006) after bulbar urethroplasty. While this finding appears counterintuitive, a mechanism can be elucidated that has been used to explain similar findings in the plastics literature: nicotine is known to inhibit inflammation and collagen synthesis. This mechanism may simultaneously explain the smoker's higher urine leak rate and lower failure through a shared anti-fibrotic mechanism. Harnessing the apparent protective effects of nicotine without tobacco will require further study, but these data suggest that urethroplasty success might be augmented by slowing the inflammatory and proliferative phases of wound healing.

Source of Funding: None

MP06-15 THE OPTILUME® DRUG COATED BALLOON FOR RECURRENT ANTERIOR URETHRAL STRICTURES: ROBUST III STUDY 4-YEAR INTERIM RESULTS

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INTRODUCTION AND OBJECTIVE: The ROBUST III study is a randomized controlled trial comparing the Optilume® Drug Coated Balloon (DCB) against direct visual internal urethrotomy (DVIU) or dilation. The Optilume® DCB is a dilation balloon with a paclitaxel coating that combines mechanical dilation for immediate symptomatic relief with local drug delivery to maintain urethral patency. Outcomes after 4-year follow-up are presented here.

METHODS: 127 subjects were randomized in a 2:1 fashion at 23 sites. Seventy-nine were treated with the DCB and 48 were treated with DVIU or dilation. Follow-up past 1 year was limited to those treated with the DCB. Eligibility criteria included adult males with anterior strictures with ≥2 prior treatments and stricture length ≤3cm. Long-term endpoints included freedom from repeat treatment, International Prostate Symptom Score (IPSS), and peak urinary flow rate (Qmax).

RESULTS: Subjects randomized to receive the DCB had an average of 3.2 prior treatments and an average stricture length of 1.6cm (46% ≥2cm), with 8/79 (10.1%) having penile strictures and 9/79 (11.4%) having prior pelvic radiation. IPSS significantly improved from 21.9 at baseline to 12.6 at 4 years, which showed slight deterioration from the 3 year (11.3), 2 year (10.1) and 1 year (9.0) results. Qmax significantly improved from a baseline of 7.7 mL/sec to 13.2 mL/sec at 4 years, which was in line with the 3 year (12.0) and 2 year (13.9) data. Freedom from repeat intervention for DCB subjects was estimated to be 71%. No late-onset treatment related adverse events were observed.

CONCLUSIONS: The Optilume® DCB continues to achieve significant improvements in symptoms, flow, and reintervention rates through 4 years post treatment.