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POD-4.1

Ventral curvature greater than 70 degrees after degloving can be successfully corrected by three transverse ventral corporotomies

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Introduction: Concerns have been raised regarding the effectiveness and durability of transverse ventral corporotomies to reliably correct chordee. Herein, we assessed the outcomes of this technique to correct ventral curvature (VC) in severe penoscrotal hypospadias.

Methods: We selected 62 patients who underwent both stages of primary staged inner prepuce graft repair with a minimum six-month followup from a prospectively collected hypospadias database (2008–2021, n=881). Proximal TIP/Byars flaps cases and redos were excluded. VC was corrected by dividing the urethral plate in all cases and performing three transverse ventral corporotomies ± dorsal plication (80%). Residual VC was checked in all cases during the second stage. All procedures were performed by a single surgeon. Preoperative testosterone stimulation (PTS) was administered for glans width <14 mm (three intramuscular injections, three weeks apart). Age at each stage of repair, meatal location, degree of VC assessed before/after degloving with an artificial erection measured by photograph with an electronic app, anesthetic block (caudal/dorsal penile block), and complications (urethrocutaneous fistula [UCF], glans dehiscence [GD], recurrent VC, and graft contraction) were collected. Outcomes of interest were postoperative recurrent VC and overall complication rate. Recurrent VC was assessed by reflex erection during examination and/or parents reporting.

Results: Median patient age at first and second stage was 21 and 30 months, respectively; mean followup was 42 months. Eighty-four percent of patients had penoscrotal 45 (72%), scrotal 9 (15%), and perineal hypospadias 12 (13%). Overall, 35/62 (57%) patients had VC between 30–70° and 27 (43%) had >70° after degloving; 57/62(92%) boys received PHS (three shots). Grafts took well in most cases, with only four (6%) contractions. Of these, two needed re-grafting and two were stretched (vit. E). The median interval between stages was eight months. Overall, complications occurred in 15/62(24%) boys: nine UCFs, five GDs, and one recurrent VC due to skin tethering. All successful cases had the neomeatus located at the tip of the glans. Parents of three boys with GD decided for no further surgery, leaving the meatus at the corona. In total, the re-operation rate was 19% (12/62).

Conclusions: An overall re-operation rate of 19% was observed in patients who underwent staged preputial graft repair with three transverse corporotomies to treat scrotal/perineal hypospadias. This rate is significantly lower than what has been previously reported using staged Byars flaps procedures or single-stage operations. After a mean followup of almost four years, recurrent VC was seen in only one child (1.6%) due to skin tethering. Despite being the longest followup described with this technique thus far, we recognize that recurrent VC may not present until adolescence, therefore, following these patients until adulthood is imperative.

POD-4.2

The role of circumcision in preventing urinary tract infections in children with antenatal hydronephrosis: Systematic review and meta-analysis

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Introduction: Circumcision has been suspected to reduce the risk of urinary tract infection (UTI) in boys with congenital urinary tract anomalies, including hydronephrosis. Our aim was to compare the rates of UTI in circumcised vs. uncircumcised boys with reported antenatal hydronephrosis by conducting a systematic review and meta-analysis.

Methods: A search was performed in December 2021. Comparative studies were evaluated according to Cochrane collaboration recommendations. Assessed measures included rates of UTIs, antibiotic prophylaxis use, and a number of renal outcomes, including renal function and cortical scarring, as well as circumcision complications. Odds ratios (OR) and mean difference with 95% confidence interval (CI) were extrapolated from available data. Random-effects meta-analysis was performed and confounders were assessed with subgroup analysis.

Results: Fourteen studies describing 7424 boys with antenatal hydronephrosis were included. Overall effect estimates demonstrate that circumcised boys have a significantly reduced odds of developing any UTI (OR 0.22, 95% CI 0.16, 0.32, p<0.001) compared to uncircumcised patients. This translates into five times higher risk of UTI if uncircumcised. There was no difference in continuous antibiotic prophylaxis use between groups (OR 1.16, 95% CI 0.91,1.49, p=0.22). The reported definitions of UTIs were varied. Long-term renal function, development of scars, and postoperative complications were not consistently reported, which prohibited pooling. The majority of studies had moderate risk of bias.

Conclusions: Current evidence suggests that circumcision reduces the frequency of UTIs in boys with antenatal hydronephrosis. Further research with adequate reporting of causes for hydronephrosis and randomized studies are required to determine clinical significance.

POD-4.3

Characterizing the immune and inflammatory microenvironments of Hunner lesions in interstitial cystitis/bladder pain syndrome using imaging mass cytometry: A new look at an old disease

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Introduction: What exactly are Hunner lesions (HL) identified in patients with interstitial cystitis (IC)/bladder pain syndrome (BPS)? We provide a deep-dive of HLs with an in-depth characterization of the cellular immune microenvironment using state-of-the-art imaging mass cytometry (IMC), Hyperion™ Imaging System in a cohort of HL-IC/BPS patients.
Methods: Bladder biopsies from patients with HL-IC/BPS were used to create formalin-fixed, paraffin-embedded tissue sections (5 mm). These were stained with 23 metal-conjugated antibodies and processed using the Hyperion™ IMC System — a technology that enables the detection of up to 37 markers on a single formalin-fixed, paraffin-embedded tissue slide. Multiplexed images were visualized and data were processed and analyzed using various computational methods to identify individual cell populations.
Results: A panel of 23 markers was designed to evaluate cellular microenvironment of HL biopsies. Analysis of HL tissue samples from our discovery cohort of 10 patients, with a median age at time of tissue biopsy of 63 years and median duration of disease of 7.5 years, provided a total of 113 500 single cells. On average, 16% of all cells within HLs were identified as CD45+ immune cells. Within the immune cell compartment, clustering analysis identified various populations including B cells, CD8+ cytotoxic T cells, FoxP3+ T regulatory cells, CD4+ T helper cells, monocytes, classical macrophages, CD163+ macrophages, and dendritic cells. Tertiary lymphoid structures were observed in three of 10 patient samples. Further analyses include stratification based on proliferation (Ki67+), activation (Granzyme B+), and/or polarization states.
Conclusions: We report the first quantification and spatial resolution of single cells in tissue samples collected from HL-IC/BPS patients using IMC. The immune complexity of HLs uncovered with this most in-depth look at the heterogeneous phenotypes of immune cells and their in situ organization lays the groundwork for further understanding of these enigmatic lesions.

POD-4.4

Secondary polycythemia while on testosterone therapy increases risk of major adverse cardiovascular events and venous thromboembolism in men: Insights from a global health research network

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Introduction: An unsafe hematocrit threshold for men receiving testosterone therapy (TT) has never been tested. This study seeks to determine whether secondary polycythemia among men receiving TT confers an increased risk of major adverse cardiovascular events (MACE) and venous thromboembolic events (VTE).
Methods: Using a multi-institutional database of 74 million patients, we identified two cohorts of men with low testosterone (Total T <350 ng/dl) who received TT for at least nine months, and subsequently either developed polycythemia (n=5887) or did not (n=42 784). Polycythemia was defined as hematocrit ≥52%. As a secondary objective, we identified two cohorts of hypogonadal men without polycythemia, who either did (n=26 880) or did not (n=27 430) receive TT. Our primary outcome was the incidence of MACE and VTE in the first year after starting TT. We conducted a Kaplan-Meier survival analysis to assess the incidence of MACE and VTE, and measured associations using odds ratios (OR). We controlled for covariates through propensity score matching.
Results: Men who developed polycythemia were older (mean age 54±12.5 vs. 52±14.8, p<0.01) and had a higher prevalence of obstructive sleep apnea, dyslipidemia, smoking, obesity, and hypertension. After propensity score matching, 5842 who received TT and developed polycythemia were compared to 5842 men who did not develop polycythemia. Men with polycythemia had a higher risk of MACE/VTE (number of outcomes: 301, 5.15%) than men who had normal hematocrit (n=226, 3.87%) while on TT (OR 1.35, 95% confidence interval [CI] 1.13–1.61, p<0.001). In hypogonadal men who received testosterone, no increased risk of MACE and VTE was identified as compared to hypogonadal men naive to TT (Figure 1, Table 1).
Conclusions: In the first year after starting TT, the development of secondary polycythemia significantly increases the risk for MACE and VTE in a matched cohort of men. To our knowledge, this is the first study that demonstrates secondary polycythemia as a possible underlying etiology associating TT and major adverse cardiovascular events. Physicians should counsel men on the small but real risk of MACE and monitor hematocrit among men receiving TT.

POD-4.5

Outcomes of patients undergoing salvage radical cystectomy post-trimodal therapy: Results of a multi-institutional Canadian cohort

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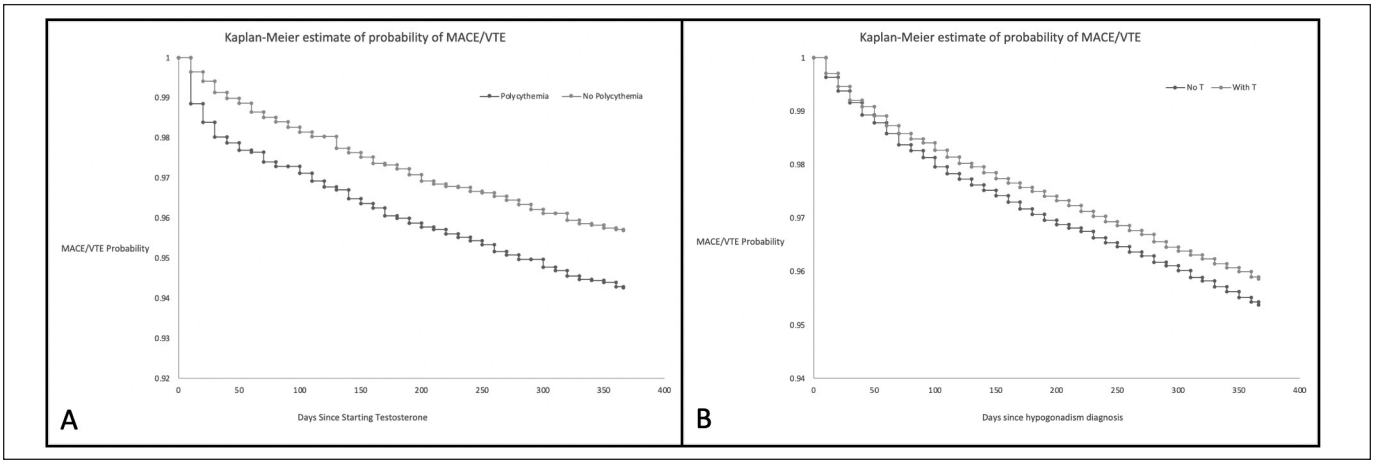

POD-4.4. Figure 1. Kaplan-Meier curves displaying the probability of MACE/VTE in the main **(A)** and secondary **(B)** comparison arms. **(A)** Men on testosterone who developed secondary polycythemia (hematocrit >52%, dark grey line) vs. men with a normal hematocrit (hematocrit <52%, light grey line). **(B)** Hypogonadal men who did (light grey line) and did not (dark grey line) receive testosterone. Men who developed hematocrit over 52% were excluded in this analysis.

POD-4.4. Table 1. Baseline characteristics of men on testosterone who did and did not develop polycythemia

	Before matching		After matching	
	Elevated hematocrit after starting TT	Normal hematocrit after starting TT	Elevated hematocrit after starting TT	Normal hematocrit after starting TT
N	5887	42343	5842	5842
Age	53.4±12.4	51.6±14.6	53.5±12.4	53.8±13.1
Race/ethnicity				
Caucasian	4905 (83.36%)	33253 (78.53%)	4870 (83.36%)	4836 (82.78%)
Black	302 (5.13%)	4194 (9.91%)	302 (5.17%)	281 (4.81%)
Latino	232 (3.943%)	1713 (4.05%)	230 (3.94%)	239 (4.09%)
Hypogonadism	4643 (78.91%)	17425 (41.15%)	4601 (78.76%)	4644 (79.49%)
Hypertension	3216 (54.657%)	18276 (43.16%)	3178 (54.40%)	3154 (53.99%)
Dyslipidemia	3206 (54.49%)	18040 (42.60%)	3172 (54.30%)	3084 (52.79%)
Obesity	2031 (34.52%)	9761 (23.05%)	1992 (34.10%)	1967 (33.67%)
Obstructive sleep apnea	1490 (25.32%)	6213 (14.67%)	1462 (25.03%)	1398 (23.93%)
Diabetes	1354 (23.01%)	8947 (21.13%)	1348 (23.07%)	1292 (22.12%)
Nicotine use	783 (13.31%)	4200 (9.92%)	770 (13.18%)	679 (11.62%)
Heart failure	255 (4.33%)	1662 (3.93%)	253 (4.33%)	225 (3.85%)
Medications				
Statin	2476 (42.08%)	14044 (33.17%)	2447 (41.89%)	2418 (41.39%)
ACE inhibitor	1816 (30.86%)	9673 (22.84%)	1788 (30.61%)	1752 (29.99%)
B-blocker	1681 (28.57%)	9664 (22.82%)	1661 (28.43%)	1594 (27.29%)
Aspirin	1478 (25.12%)	9157 (21.63%)	1461 (25.01%)	1383 (23.67%)
Clopidogrel	199 (3.38%)	1356 (3.20%)	196 (3.36%)	180 (3.08%)

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Introduction: Trimodal therapy (TMT) is an alternative to radical cystectomy for the treatment of muscle-invasive bladder cancer (MIBC) in well-selected patients.[1] Rates of recurrence and non-response to TMT have been reported to be up to 30%.[2] Salvage radical cystectomy (sRC) is an option for patients with persistent or recurrent disease. Patient characteristics that predict success with sRC are not well-defined. We report the outcomes of patients undergoing sRC from a multi-institutional Canadian cohort.

Methods: Patients who underwent sRC post-TMT were identified retrospectively from the TMT Canadian Collaboration. This collaboration includes patients treated at 14 Canadian Institutions. Patient characteristics, histopathology findings, and survival outcomes were evaluated. Patients undergoing sRC were grouped into immediate (within six months post-TMT) and delayed sRC (more than six months post-TMT).

Results: There were 864 patients included in this series, of which 64 underwent sRC. Of those, 17 underwent immediate sRC and 47 delayed sRC. Patients who had an immediate salvage were more likely to be younger, male, have a higher tumor and nodal stage, variant histology, hydronephrosis, and radiation to bladder only (no chemotherapy) compared to those who underwent a delayed sRC (Table 1). Most patients underwent pelvic lymph node dissection (86%), with a median nodal count of 9 (4–16). Most patients underwent an ileal conduit (96.9%) and most had a negative margin (81.2%). The median overall survival (OS) for the entire cohort was 89 months. The OS between immediate and delayed sRC was 20 months and 129 months, respectively.

Conclusions: sRC is feasible and has acceptable oncological outcomes. Patients who undergo delayed sRC have a much better prognosis compared to those who undergo immediate sRC. This highlights the import-

POD-4.5. Table 1. Patient demographic and clinicopathological characteristics

Characteristic	sRC subgroup (n=64)	Immediate sRC (n=17)	Delayed sRC (n=47)
Age (years), median (IQR)	75.0 (65.0-79.3)	72.0 (67.0-80.0)	76.0 (63.0-79.0)
Gender, n (%)			
Males	49 (76.6)	15 (88.2)	34 (72.3)
Females	15 (23.4)	2 (11.8)	13 (27.7)
Tumor stage, n (%)			
cT2	52 (81.2)	13 (76.5)	39 (83.0)
cT3-4a	12 (18.8)	4 (23.5)	8 (17.0)
Nodal Stage, n (%)			
cN0	59 (92.2)	14 (82.4)	45 (95.7)
cN1–2	5 (7.8)	3 (17.6)	2 (4.3)
Histology, n (%)			
Pure UC	56 (86.5)	13 (76.5)	43 (91.5)
UC + variant histology	8 (12.5)	4 (23.5)	4 (8.5)
Hydronephrosis, n (%)			
No	46 (71.9)	9 (52.9)	37 (78.7)
Yes	18 (28.1)	8 (47.1)	10 (21.3)
RT site, n (%)			
Bladder only	24 (37.5)	8 (47.1)	16 (34.0)
Whole pelvis	38 (59.4)	8 (47.1)	30 (63.8)

ance of patient selection when deciding between treatment options. Patients with higher T and N stage, variant histology, hydronephrosis, and treated with radiation only are at an increased risk for early salvage.

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POD-4.6

Risk of local progression during active surveillance for renal masses under 4 cm

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Introduction: Active surveillance (AS) is a first-line management option for patients with a small renal mass <4 cm (SRM). Local progression of a SRM during AS may prompt intervention for some patients. There are limited data regarding the long-term risk of progression for patients with a SRM. The objective of this study was to determine the risk of local progression for patients with a SRM on AS.

Methods: Patients enrolled in the Canadian Kidney Cancer information system (CKCis) from January 2011 until October 2021 with a SRM initiating AS were included. Patients were excluded if they had a family history of kidney cancer, multifocal or bilateral tumors, or had metastases at diagnosis. Local progression was defined as a mass growing to >4 cm in diameter (size progression) or a linear growth of >0.5 cm per year (growth progression).

Results: A total of 1173 patients with a SRM met eligibility criteria; 59.5% were male and the mean age was 68.2 years. At diagnosis, 999 (85.2%) of tumors were <3 cm, 646 (55.1 %) were <2 cm, and 145 (12.4%) were <1 cm. At a median followup of six years, 166 patients (14.2%) had size progression and 449 patients (38.3%) had growth progression. In total, 486 (41.4%) of patients experienced any progression event. Five-year freedom from any local progression event was 54%.

Conclusions: This is the largest study to describe the risk of local progression for Canadian patients undergoing AS. Approximately 40% of patients will experience a local progression event within six years of initiating AS. The risk of progression by size and growth definitions varies based on the original tumor size and time on AS. These data will help inform counselling and followup strategies for patients with SRMs <4cm on AS. The prognostic impact of a local progression event on metastases and survival remains to be determined.