Poster Session 9: Oncology–Kidney, Testes, Penile

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MP 9.1

Robotic-assisted vs. traditional laparoscopic partial nephrectomy operative outcomes: A single-operator, comparative study

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Introduction: The EAU currently recommends partial nephrectomy for localized cT1 renal tumors. With the advent of robotic-assisted partial nephrectomy (RAPN), there is growing evidence that warm ischemia time may be reduced compared to the traditional laparoscopic-assisted partial nephrectomy (LAPN). The current study aimed to reduce inter-operator bias while maintaining an adequate sample size to assess the differences in outcomes between the two approaches using a single-operator experienced in both approaches.

Methods: We retrospectively chart reviewed all partial nephrectomies undertaken by a single surgeon from 2019–2021. Patient demographics (such as age, weight, GFR), as well as perioperative outcomes (such as operation time, blood loss, hemoglobin drop, warm ischemic time) and postoperative outcomes (such as length of stay) were collected.

Results: A total of 95 cases were retrieved for inclusion in this study (46 RAPN, 49 LAPN). There were no significant differences in patient demographics or comorbidities. RAPN was associated with significantly reduced mean operative time (142 vs. 157 minutes), warm ischemic clamp time (13.9 vs. 16.5 minutes), and mean hospital stay (2.4 vs. 3.7 days). RAPN was also associated with a reduced drop in postoperative day 1 GFR (6.1 vs. 13.5); however, a significant long-term improvement in GFR was not seen.

Conclusions: RAPN is a safe and effective alternate to LAPN. RAPN may reduce operative times and warm ischemic times leading to improved renal function preservation in the short term. Further prospective studies and cost-benefit analysis of robotic-assisted partial nephrectomy would be valuable in confirming these findings and justifying the use against their financial cost.

MP 9.2

Multi-institutional validation study of the kidney cancer risk equation: Results from the Canadian Kidney Cancer information system (CKCis)

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Introduction: The kidney cancer risk equation (KCRE) is a validated clinical tool to predict the risk of end-stage renal disease (ESRD) at five years post-radical (RN) or partial (PN) nephrectomy. The KCRE has been validated in the surgical kidney cancer population, however, requires further external validation with a larger cohort. Our objective was to validate the five variables of the KCRE (age, sex, region, eGFR, and urine albumin:creatinine ratio) by using the Canadian Kidney Cancer information system (CKCis).

Methods: The CKCis was used to identify a validation cohort of adult patients who underwent PN or RN for localized kidney cancer, between January 2011 and January 2024, who had an available preoperative and postoperative eGFR measurement at five years. Exclusion criteria included multifocal tumors, solitary kidney, bilateral nephrectomy, prior history of kidney transplant, and preoperative eGFR <15 ml/min/1.73m^2. The KCRE was calculated prior to surgery, with the primary outcome being postoperative eGFR <15 ml/min/1.73m^2. Area under the curve (AUC) and calibration plots were used to determine predictive accuracies.

Results: The cohort included 7745 patients with a median followup of 4.5 years. The mean age was 61 years old (SD±12) with 33.9% (n=2626) of our cohort consisting of female patients. Preoperative eGFR was 80 ml/min/1.73m^2 (±21). Just over half (52.3%, n=4051) of patients underwent partial nephrectomy, while the remaining 47.7% (n=3695) underwent radical nephrectomy. The KCRE model had excellent discrimination, with an AUC value of 0.88, comparable to its performance in the original publication. A total of 202 (2.61%) patients progressed to eGFR <15 ml/min/1.73m^2 at five years, with calibration plots demonstrating an overestimation of renal failure risk post-nephrectomy.

Conclusions: The five variables of KCRE demonstrated excellent discrimination for predicting renal failure post-nephrectomy when validated in a large multi-institutional cohort. Further implementation of this clinical tool may aid in pre-treatment clinical decision making for patients and providers.

MP 9.3

Development of secondary malignancies following the treatment of testicular germ cell tumors: A systematic review and meta-analysis

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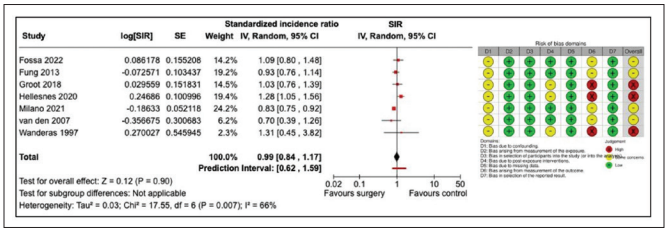
Introduction: Testicular germ cell tumors (TGCTs) are the most common malignancy in men 15–35 years of age. Management options for men with TGCTs include surgery, radiation, and/or chemotherapy. Given TGCTs' excellent survival, the vast majority of patients live long enough to experience the delayed toxicities of treatments, warranting careful consideration of therapeutic choices at the time of treatment. A particularly important outcome of interest is the development of secondary malignant neoplasms (SMNs).

Methods: A systematic literature search was conducted through a combination of database searches (Medline, EMBASE, and Cochrane library) and manual review. Studies evaluating the incidence of SMNs in patients following treatment for TGCTs were identified. Our primary outcome of interest was the diagnosis of any non-germ cell SMN following treatment until death and/or loss to followup for each treatment modality compared to the general population. Initial abstract screening, full-text review, and data extraction were conducted in duplicate by reviewers with content expertise. The ROBINS-E tool was used to assess the risk of bias. Meta-analysis was performed using a random-effects model with inverse weighting, with outcomes reported as standardized incidence ratios (SIR) with 95% confidence intervals (CIs). Publication bias was explored. Subgroup analyses were conducted to explore interstudy heterogeneity. The strength of evidence was evaluated using the GRADE framework.

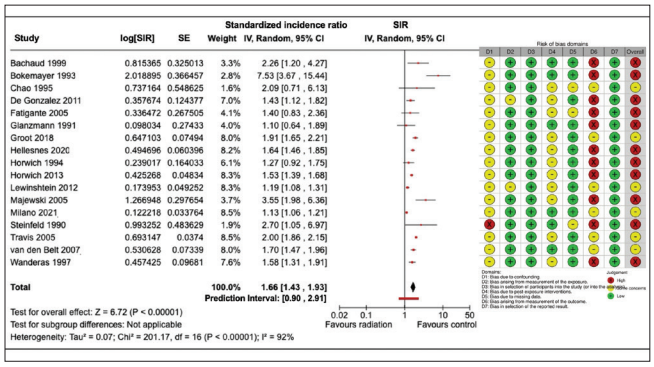
Results: Twenty-one studies including 88 863 patients with 5180 SMNs were included. The incidence of non-germ cell SMNs following definitive treatment of TGCTs varied by treatment modality. Surgery alone was not associated with an

increased risk (SIR 0.99, 95% CI 0.84–1.17); radiation (SIR 1.66, 95% CI 1.43–1.93), chemotherapy (SIR 1.65, 95% CI 1.39–1.96), and combined chemotherapy and radiation (SIR 2.73, 95% CI 2.23–3.33) were associated with a moderate to large increase in risk (Figures 1–4). There was low to moderate certainty in the quality of evidence by GRADE framework.

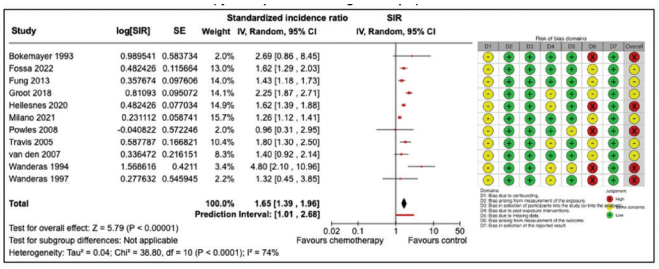
Conclusions: Chemotherapy, radiation, and their combination are associated with an increased risk of non-germ cell SMNs after the treatment of TGCTs.



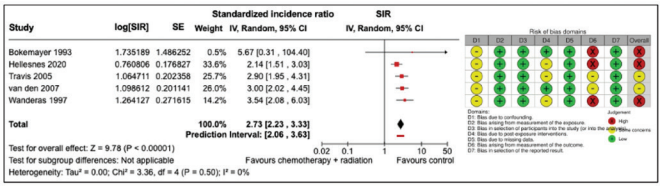
MP 9.3. Figure 1. Forest plot for studies assessing the risk of any non-germ cell secondary malignancy after treatment with surgery only compared to the general population.



MP 9.3. Figure 2. Forest plot for studies assessing the risk of any non-germ cell secondary malignancy after treatment with radiation compared to the general population.



MP 9.3. Figure 3. Forest plot for studies assessing the risk of any non-germ cell secondary malignancy after treatment with chemotherapy compared to the general population.



MP 9.3. Figure 4. Forest plot for studies assessing the risk of any non-germ cell secondary malignancy after treatment with both chemotherapy and radiation compared to the general population.

MP 9.4

Performing radical subinguinal orchiectomies when compared to the standard inguinal approach

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Introduction: Until recently, radical orchiectomies (ROs) have routinely been performed using the inguinal approach. Emerging evidence highlights the safety of performing ROs using the subinguinal approach, offering decreased intraoperative complexity and pain for the patient when compared to its inguinal counterpart, without compromising oncologic outcomes. This study sought to further these preliminary findings by investigating the safety, outcomes, and feasibility of performing ROs subinguinally when compared to the standard inguinal approach.

Methods: An ambi-directional study has been ongoing since September 2022, including all patients undergoing either a subinguinal or inguinal RO under deep intravenous sedation and those deemed eligible for day surgery at our ambulatory surgical center (ASA 1–3). Selection for the subinguinal approach required both negative preoperative tumor markers and CT imaging. Patients with an ASA score >3 or those preferring general anesthesia (GA) were excluded. Intraoperative complications, operating time, surgical margins, and patient tolerability (4–6 weeks) were evaluated.

Results: Currently, 15 patients with a mean age of 41.5±14.9 years and 19 patients with a mean age of 34.0±10.5 years have undergone a subinguinal RO and inguinal RO, respectively. All procedures were performed successfully without any intraoperative complications. Tumor histopathology, pathology, and surgical margins are described in Table 1. The mean operating times were 31.1±4.9 minutes and 42.9± 15.2 minutes for the subinguinal and inguinal cohorts, respectively. Lastly, all patients across both cohorts reported tolerating their procedure well at followup, 4–6 weeks postoperatively.

Conclusions: Our results further validate the safety, while demonstrating the tolerability and feasibility, of performing ROs for suspected testicular tumors subinguinally when compared to the standard inguinal approach. Using this approach may improve the patient experience during ROs while optimizing of efficiency of operating and procedural rooms. The potential for this approach to deliver postoperative benefits — such as improved healing, enhanced patient satisfaction, and a quicker return to work — while preserving favorable long-term oncologic outcomes, warrants further investigation.

Acknowledgements: The authors are grateful for the supportive staff at the Men's Health Clinic Manitoba.

MP 9.4. Table 1. Histopathology, pathology, and surgical margins for subinguinal and inguinal RO cohorts

			Subinguinal (n=15)	Inguinal (n=19)
Histopathology	Primary tumours	Seminoma, n	8	11
		Non-seminoma, n	2	5
		Mixed, n	2	1
	Secondary tumours	Large B-cell lymphoma, n	1	1
	Benign Tumours	Leydig cell tumour, n	0	1
		Epididymal cyst, n	1	0
	Negative[a], n		1	0
Pathology	pT1, n		9 [b]	14 [b]
	pT2, n		2 [b]	3 [b]
Surgical parameters	Size of tumour, cm (range)		3.1 (1.6-7.3)	4.1 (0.7-9.3)
	Negative margin status, n (%)		14 (100)[c]	18 (100)[c]

MP 9.5

Sperm banking in men treated for testicular cancer: High costs and low utilization

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Introduction: The study aimed to assess the fertility outcomes of men treated for testicular cancer who underwent sperm cryopreservation at our institution, as well as to evaluate the associated costs.

Methods: We conducted a retrospective chart review at the sole fertility center in Manitoba, focusing on patients who underwent sperm cryopreservation prior to cancer treatment. From this review, we identified a cohort of testicular cancer patients treated between 2007 and 2019. A telephone questionnaire was then administered to these individuals, covering topics such as cryopreservation, fertility outcomes, and associated costs.

Results: The mean age at the time of sperm banking was 26. Of the 42 men who underwent sperm cryopreservation for testicular cancer, 24 responded to the questionnaire. Among these 24 men, 17 received systemic therapy, while seven underwent orchiectomy alone. Eleven men conceived naturally after treatment, three used the banked sperm to father a child, and ten had not attempted to have children. The costs for sperm banking included a $300 registration fee, $250 per sperm deposit, and an annual storage fee ranging from $300–500. The majority of men (58%) felt the costs were too high, particularly in light of their cancer diagnosis. On average, men stored their sperm for three years, with total costs amounting to $2000. While all respondents chose sperm banking to preserve fertility and provide peace of mind, half of them reported feeling rushed by the process and felt they were not given enough time to consider sperm cryopreservation before starting treatment (surgery or systemic therapy).

Conclusions: Our study revealed that among men who opted for sperm cryopreservation prior to testicular cancer treatment, the usage of banked sperm was low (<15%), with many men successfully fathering children without relying on the banked sperm. Given the relatively high costs of sperm banking and the low likelihood of using the stored sperm, patients should be informed about both the costs and potential benefits of sperm banking before beginning treatment for testicular cancer.

MP 9.6

Aldosterone synthase (CYP11B2) immunohistochemical staining in surgical primary aldosteronism: Defining patterns and correlation with clinical outcomes

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Introduction: Primary aldosteronism (PA) is a disease of excess endogenous aldosterone production that accounts for up to 11.2% of new cases of hypertension. Aldosterone is produced in the zona glomerulosa by the enzyme aldosterone synthase (CYP11B2). The most prevalent etiologies of PA are bilateral idiopathic adrenal hyperplasia and unilateral disease, such as aldosterone-producing adenomas or adrenal hyperplasia. Unilateral disease is often treated surgically via a laparoscopic adrenalectomy. The immunohistochemistry patterns of surgical specimens with CYP11B2 remain underdefined, as well as their prognostic value.

Methods: Patients undergoing adrenalectomy for PA at one center were identified over a 10-year period. Sociodemographic and clinical parameters were recorded, such as lab values, imaging features, adrenal vein sampling results, and clinical outcomes. Pathology specimens were stained with aldosterone synthase (CYP11B2). Patterns of immunohistochemistry were then described.

Results: Thirty patients who underwent an adrenalectomy for PA over a 10-year period were included. Adrenal vein sampling was conducted on 27 patients preoperatively. The mean number of anti-hypertensives used pre- and postoperatively was 3.03 and 0.92 per patient, respectively. None of the 23 patients that were hypokalemic preoperatively remained so postoperatively. Further, 21 patients were cured surgically, four improved, and five had no improvement. Immunostaining was available on 18 cases of adrenal glands that contained at least one grossly visible tumor (12 ≥1.0 cm, six <1.0 cm). In the lesions ≥1.0 cm, seven (58%) showed homogenous staining, four (33%) showed heterogenous staining, and one (8%) showed no staining. In the lesions measuring <1.0 cm, six showed homogenous staining. No obvious correlation between histochemistry and cure rates was observed.

Conclusions: Aldosterone synthase (CYP11B2) immunohistochemistry in cases of PA shows a diverse phenotype. This information can be used to inform larger, multicentered studies to define this pattern clearly and ascertain whether immunohistochemistry can predict clinical outcomes.

MP 9.7

Deep intravenous sedation: An effective anesthetic approach for radical inguinal orchiectomies

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Introduction: Radical inguinal orchiectomy (RO) is the standard treatment for testicular cancer and chronic orchialgia, traditionally performed using general (GA) or spinal anesthesia (SA), with limited evidence supporting the use of deep intravenous sedation (DIVS). This study aimed to assess the safety and feasibility of conducting RO under DIVS combined with a multimodal local anesthetic approach.

Methods: A retrospective study was carried out on all patients referred to a single urologic ambulatory surgical center (ASC) between September 2022 and June 2024 who underwent radical inguinal orchiectomy under DIVS with additional multimodal local anesthesia (LA). Patients with an ASA score above 3 or those receiving orchiectomy for reasons other than suspected testicular tumor or refractory chronic orchialgia were excluded. Data on patient tolerability, surgical parameters (such as surgery duration and length of postoperative stay), and relevant surgical outcomes were collected from patient records, with all data reported descriptively.

Results: A total of 40 patients, with a mean age of 39.1±13.8 years, were analyzed according to the inclusion and exclusion criteria. All procedures were well-tolerated during the intraoperative phase and were completed without any complications (i.e., patient intolerability, conversion to general anesthesia, etc.). The mean operating time was 37.7±13.3 minutes, ranging from 23–93 minutes, while the mean postoperative length of stay was 55.3±18.4 minutes, with a range of 25–90 minutes. Negative surgical margins were achieved for all patients (Table 1). Pain resolution was noted in four out of six chronic orchialgia patients, with the remaining patients experiencing persistent scrotal pain. There were no procedure-related complications, including no visits to the emergency room and family doctor. Followup occurred 4–6 weeks after the procedure, and all patients reported doing well, with no concerns regarding tolerability of the procedure.

Conclusions: This study demonstrates that using DIVS in combination with multimodal LA is safe, effective, and feasible in patients undergoing a radical inguinal orchiectomy.

MP 9.7. Table 1. Histopathology, pathology, and relevant surgical outcomes following radical inguinal orchiectomy for suspected testicular tumors

Histopathology	Primary tumours	Seminoma, n (%)	19 (56)
		Non-seminoma, n (%)	7 (21)
		Mixed, n (%)	3 (9)
	Secondary tumours	Large B-cell lymphoma, n	2
	Benign Tumours	Leydig cell tumour, n	1
		Epididymal cyst, n	1
	Negative*, n		1
Pathology	pT1, n (%)		24 (83)**
	pT2, n (%)		5 (17)**
Surgical parameters	Size of tumour, cm (range)		3.7 (0.7-9.3)
	Negative margin status, n (%)		32 (100)***

MP 9.8

The project PEN-1: Clinical database for the analyses of the treatment of penile cancer at the CHU de Quebec-Université Laval

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Introduction: Penile cancer (PeCa) is a rare malignancy, with an incidence of 1/100 000 males, but has favorable survival when organ-confined. There have been recent reports of increasing incidence globally; however, there is limited Canadian literature pertaining to these neoplasms. Retrospective and prospective maintained clinical databases are, therefore, of crucial importance to fill this information gap.

Methods: This is a retrospective and prospective longitudinal study of patients diagnosed and treated with PeCA from 2004–2024 at the CHU de Québec. Data collection began in March 2021. Patients diagnosed with benign lesions or metastatic non-penile cancer were excluded.

Results: Data from 243 patients were collected. Median age was 66 years old (10–91). HPV status was available in 121 and positive in 64 cases (52.9%). The main intervention performed was partial penectomy (61.4%). Inguinal lymphadenectomy was performed in 40.3% of cases (64.6% in pT1b+ patients) and pelvic in 23.7%. Sentinel node for cN0 pT1b+ patients was performed in 30 patients and routinely offered since 2021. The majority of cancers were stage pT1 (35.3%) or pT2 (23.4%), and 23.8% of cases presented lymph node involvement (pN1+). The number of cases per year increased from 4–14 before 2021 to 14–24 after 2021.

Conclusions: Our study provides a detailed portrait of patients treated for PeCa at the tertiary center CHUQ-UL. Introducing the sentinel node technique increased the volume of patients treated per year. This retrospective analysis allows us to make a comparison with the literature, collect data for future research, and better assess the quality of the management of this rare disease in our institution.

MP 9.9

Comparing outcomes of retroperitoneal vs. transperitoneal robot-assisted partial nephrectomy

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Introduction: We aimed to describe the surgical efficacy and safety of retroperitoneal robot-assisted partial nephrectomy (R-RAPN) vs. transperitoneal robot-assisted partial nephrectomy (T-RAPN).

Methods: We retrospectively reviewed a prospectively maintained database of robot-assisted partial nephrectomies by a single surgeon from September 2022 to September 2024, performed at two academic institutions. Baseline patient and tumor characteristics, operative and perioperative parameters, 30-day complications, and 3–6-month followup data on creatinine clearance and hemoglobin were collected. Statistical analyses were conducted using SPSS (version 29). Descriptive statistics (means, standard deviations, frequencies) were calculated, and assumptions of normality and homogeneity of variances were checked for continuous variables. Linear regression was used to evaluate relationships between operative parameters and clinical outcomes.

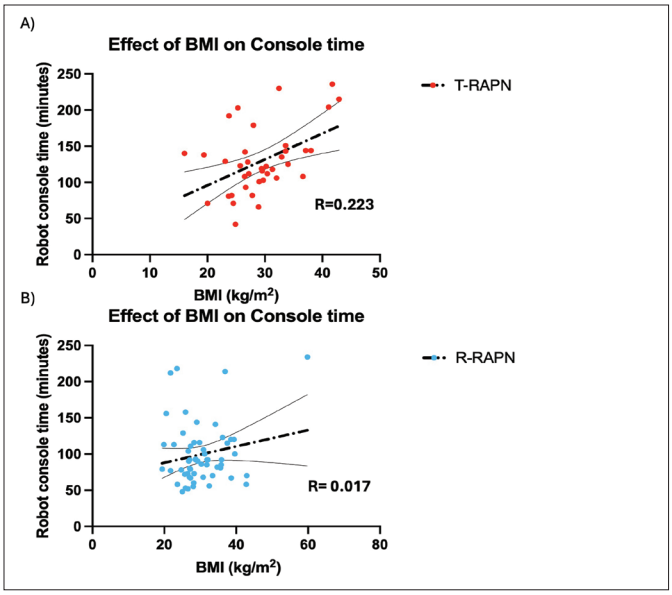
Results: A total of 101 patients were recruited, with three excluded due to multiple tumor resections. The T-RAPN had 40 patients, while the R-RAPN group included 58. The T-RAPN cohort had more anterior tumors, while the R-RAPN cohort had more posterior tumors ($p<0.001$). The R-RAPN group demonstrated significantly shorter mean operative time (179 vs. 156 minutes, $p=0.034$), console time (131 vs. 100 minutes, $p<0.001$), and lower blood loss (293 vs. 153 ml, $p=0.011$). After adjusting for a learning curve, these differences became more pronounced, with the R-RAPN group showing an even shorter mean console time (126 vs. 94 minutes, $p<0.001$) and a greater reduction in estimated blood loss (328 vs. 156 ml, $p=0.01$). Followup postoperative eGFR drop was significantly smaller in the R-RAPN group (-8.5 vs. -3.9, $p=0.043$) (Table 1). In patients with a BMI >30, R-RAPN showed a 51-minute shorter console time (Figure 1). The difference in console time was 52 minutes when comparing both approaches for posterior tumors. For anterior tumors, R-RAPN showed similar console time and blood loss. Linear regression revealed that BMI was associated with longer operative time in the T-RAPN group but not in the R-RAPN group. RENAL score, CCI, and cystic tumor consistency were not correlated with increased console time in either group.

Conclusions: R-RAPN is an efficient approach for partial nephrectomy, with superior surgical outcomes for posterior tumors. R-RAPN also appears to be less affected by BMI than T-RAPN.

MP 9.9. Table 1. Perioperative and pathologic outcomes

	T-RAPN (n= 40)	R-RAPN (n=58)	p
OR time, minutes, mean (SD)†	179.28 (59.25)	156.07 (51.38)	**0.034**
Console time, minutes, mean (SD)†	130.59 (45.97)	99.58 (42.20)	**<0.001**
Estimated blood loss, ml, mean (SD)†	293.00 (386.97)	153.45 (170.66)	**0.011**
Mean clamp time, mean (SD)†	25.91 (11.28)	23.59 (11.05)	0.404
Enucleation, n (%)‡	23 (57.50)	45 (77.59)	**0.034**
Off clamp, n (%)‡	7 (17.50)	18 (31.03)	0.131
Collecting system entry, n (%)‡	12 (30.00)	11 (18.97)	0.205
Number of transfusions, n (%)†	6 (15.00)	2 (3.45)	0.072
Number of patients requiring transfusion, n (%)*	4 (10.00)	1 (1.72)	0.155
POD1 Hb change from baseline, g/L, mean (SD)	-20.53 (12.41)	-19.43 (10.55)	0.640
3–6 month eGFR change from baseline, mL/min/1.73m², mean (SD)	-8.53 (10.20)	-3.93 (10.10)	**0.043**
eGFR return to preoperative baseline, n (%)‡	12 (33.33)	21 (42.86)	0.373
Clavien-Dindo, n (%)*			1.00
1–2	1 (2.50)	6 (10.34)	
3	1 (2.50)	2 (3.45)	
4	0	0	
Converted to open*	1 (2.50)	0	0.408
Margins free of tumor‡	38 (95.00)	58 (100.00)	0.085
Pathology‡			
Clear cell RCC	26 (65.00)	32 (55.17)	0.062
Papillary RCC	2 (5.00)	13 (22.41)	
Chromophobe RCC	3 (7.50)	6 (10.34)	
AML	2 (5.00)	4 (6.90)	
Oncocytoma	7 (17.50)	3 (5.17)	

Bolded values indicate statistical significance. †Mann-Whitney U test. ‡Chi-squared. *Fisher's exact test.



MP 9.9. Figure 1. Effect on BMI on console time: (A) T-RAPN; (B) R-RAPN.

MP 9.10

Survival outcomes following adjuvant therapy in pathologic node-positive penile cancer after inguinal lymph node dissection

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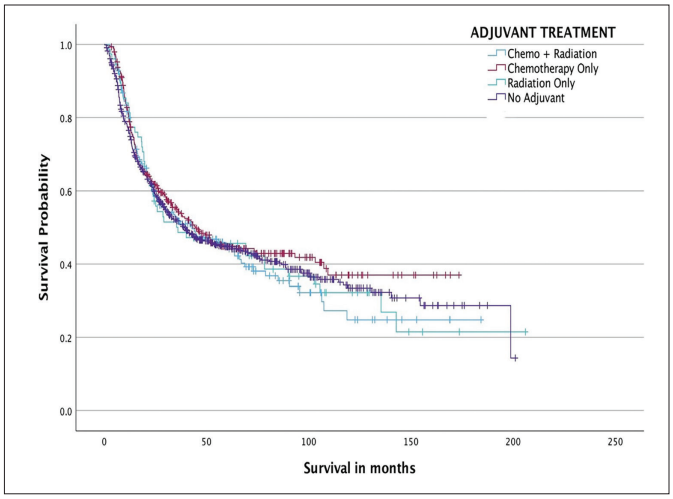
Introduction: Penile cancer is a rare malignancy with an incidence of 0.58 cases per 100 000 in the U.S. While inguinal lymph node dissection (ILND) with adjuvant therapy is the preferred approach for managing nodal disease, the advantages of the adjuvant strategies remain unclear. Around one-third of patients with penile cancer may show involvement of the inguinopelvic lymph nodes; hence, understanding the survival outcomes with adjuvant therapies is essential. Using the National Cancer Database, we compared survival outcomes in patients with pathologic node-positive penile cancer treated with ILND and adjuvant treatments.

Methods: We identified patients with node-positive non-metastatic penile cancer (Tany pN+ M0) with squamous cell histology after ILND from 2004–2020. These patients were grouped into the chemotherapy with radiation arm, those who received both chemotherapy and radiotherapy, the chemotherapy arm, those who received only chemotherapy, the radiation arm, those who received only radiation and no adjuvant arm, and those who received no adjuvant therapy. A Kaplan-Meier and multivariate Cox regression analysis were performed to compare the overall survival (OS) outcomes.

Results: Among 19 271 patients with penile cancer, 1384 were node-positive. Of these, 1101 patients met our selection criteria; 181 (16.4%) had chemotherapy with radiation, 289 (26.2%) had chemotherapy, 75 (6.8%) had radiation, and 556 (50.5%) had no adjuvant treatment. The median OS for chemotherapy with radiation was 42.8 months (95% CI 21.9–63.8), chemotherapy was 44.6 (95% CI 31.5–57.8) months, radiation was 36 (95% CI 9.1–78.8) months, and no adjuvant was 39.5 (95% CI 27.2–51.8) months (p=0.69) (Figure 1). Multivariate Cox regression analysis showed no significant difference in survival hazards.

Conclusions: In our study on N+ penile cancer following ILND, we observed no significant difference in OS between various adjuvant therapies; however, chemotherapy and chemotherapy with radiation had higher months of survival, which needs further exploration.



MP 9.10. Figure 1. Comparison of survival outcomes between various adjuvant therapies in node-positive PCa after ILND.

MP 9.11

Evaluating ChatGPT's utility in managing metastatic testicular cancer: A comparative analysis of expert recommendations and cross-language performance

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Introduction: The treatment of metastatic testicular cancer (TC) requires a multidisciplinary approach, with expert opinions to achieve optimal patient outcomes; however, immediate access to this can be limited in urgent or resource-limited situations. Artificial intelligence (AI) tools have emerged as valuable resources for rapid information retrieval. We evaluated the utility of Chat Generative Pre-Trained Transformer (ChatGPT) in initial treatment planning by comparing its recommendations for complex TC cases with those from the Virtual Canadian Testicular Cancer Second Opinion Group (VCTCSOG).

Methods: This retrospective study analyzed 46 consecutive TC cases reviewed by VCTCSOG between October 2020 and September 2024. The study evaluated ChatGPT's ability to generate comprehensive case summaries, including accurate staging and risk group assessments, with errors identified and corrected by the authors. Additionally, ChatGPT was prompted to provide the top three treatment options, which were compared against those proposed by the expert opinion group. The first treatment option suggested by ChatGPT was further evaluated based on the group's consensus. The study also assessed ChatGPT's performance in Spanish, analyzing its consistency and accuracy relative to its English responses. Treatment options were evaluated in the same manner, and the quality of references cited by the AI was also critically reviewed.

Results: The median age at presentation was 32 years (IQR 25–41). All cases were metastatic germ cell tumors (non-seminomatous in 80.4%), with 74% classified as clinical stage III. ChatGPT provided comprehensive summaries in 97.8% of cases in both languages; however, staging and risk classification accuracy was 60.9% in English and 67.4% in Spanish (McNemar test, p=0.549). A median of five experts from the VCTCSOG reviewed each case, with the most common inquiries focused on treatment sequencing (82.6%). ChatGPT's top three treatment recommendations aligned with expert opinions in 80.4% of English and 78.3.5% of Spanish cases. Its leading recommendation matched expert consensus in 67.4% in English and 52.2% in Spanish (p=0.092). High inter-language reliability was observed, with an overall kappa of 0.801 across all response comparisons. Clinical guidelines were cited in 89.1% of English and 87% of Spanish cases. No significant predictors of full agreement or alignment in leading recommendations were identified through binary logistic regression.

Conclusions: ChatGPT is a valuable first-step tool for evaluating metastatic TC cases, demonstrating effectiveness in English and Spanish; however, it is still under development, so it does not replace the expertise of specialists or multidisciplinary teams.

MP 9.12

Comparative analysis of treatment modalities for vesicourethral anastomotic stenosis: A single-center, retrospective cohort study

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Introduction: Vesicourethral anastomotic stenosis (VUAS) is a complicated condition following radical prostatectomy, posing a management challenge. Despite several available treatments, we lack comprehensive data on long-term outcomes, particularly regarding recurrence intervals and catheter dependence. This retrospective study aimed to assess the effectiveness of various VUAS treatment methods.

Methods: Our retrospective cohort study includes patients treated for VUAS at single institution from January 2018 to the present. We evaluate treatment efficacy by measuring time to recurrence and defining the recurrence-free interval. Additionally, we assess catheter dependency.

Results: In a cohort of 47 individuals with a median age of 72, patients underwent a median of two interventions comprising one dilation and Incision. A total of 65.95% (n=31) patients achieved recurrence-free status after undergoing a median of two interventions (range 1–8) for a median of 798 days. Conversely, 34.05% (n=16) of the patients remained either catheter-dependent or continued to undergo a procedure after a median of two interventions (range 1–8) (Table 1). The median intervals to recurrence post-procedure were 24 days for dilation and 107 days for incision. The analysis revealed no statistically significant correlation between the number of treatments and achieving recurrence-free state.

Conclusions: Our study on the management of VUAS concludes that, while dilation and incision offer temporary relief, their long-term effectiveness is significantly limited. These results highlight the urgent need for further exploration of alternative therapeutic options to achieve more lasting outcomes. Recognizing the constraints of a small sample size in this study, we stress the importance of larger-scale research to confirm these findings and enhance the management of VUAS.

Acknowledgements: The abstract was presented as an unmoderated poster at NSAUA 2024 (data is updated further).

MP 9.13

Assessing complications from retroperitoneal lymph node dissection for testicular cancer in North America: NSQIP 2012–2022

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Introduction: Retroperitoneal lymph node dissection (RPLND) is a procedure of significant therapeutic and diagnostic value in the management of testicular cancer patients. Despite its invasiveness and complexity, prior research indicates relatively low complication rates, which can vary based on patient characteristics and disease-related factors. This study aims to conduct a comprehensive review of surgical outcomes following RPLND procedures performed in North America over the last decade.

Methods: We queried the National Surgical Quality Improvement Program (NSQIP) database spanning from 2012–2022 (n=9 857 040) to identify patients who underwent RPLND (identified by CPT codes 38562, 38564, 38570, 38572, 38747, 38780, 49203, 49204, 49205) and were diagnosed with testicular cancer (ICD codes) using the NSQIP database. The NSQIP database prospectively collects data from several hundred participating institutions on over 100 clinical variables. The primary outcome studied was 30-day morbidity. Secondary outcomes included specific components of the primary outcome, time-to-complication analysis, rate of multivisceral resection, LOS, and readmission rates within 30 days. Binomial logistic regression was used to identify risk factors associated with postoperative complications.

Results: A total of 513 RPLND procedures met the inclusion criteria. The median age was 30 years (IQR 24–36.50) with a BMI of 27.9 kg/m2 (IQR 24.5–32.0); 18% of patients were recorded as disseminated cancer. There were approximately 50 RPLNDs recorded in the NSQIP database per year (except for 2013 and 2019). The overall 30-day morbidity rate was 16.8% (n=86). Bleeding/transfusion perioperatively (11.9%), return to the operating room (2.5%), and S-SSI (2.3%) were the three most common complications. The median time-to-complication was day 0 (IQR 0–0), day 8 (IQR 4–12), and day 12 (IQR 8–20). There were no deaths within 30 days. The most common concurrent procedure performed was orchidectomy (8.2%). Concurrent vascular repair/reconstruction and nephrectomy were performed in 3.7% and 1.9% of cases, respectively. The bowel/liver/pancreas resection rate was <1%. Factors associated with increased 30-day morbidity included a history of smoking (OR 2.5, 95% CI 1.35–4.68), and concurrent vascular repair/reconstruction (OR 4.1, 95% CI 1.12–15.46). The median LOS post-RPLND was four days (IQR3–6), and the 30-day readmission rate was 7.0%.

Conclusions: This study reports complications for RPLNDs performed in North America and identifies important predictors of complications. Surgical outcomes compare favorably to other international series. This study offers up-to-date outcomes for urologic oncologists to discuss with patients, helping them understand the inherent risks of RPLND surgery.

MP 9.14

A multicenter, randomized, double-blind study examining the efficacy and safety of denosumab in combination with first-line platinum-based chemotherapy for patients with bone metastases secondary to metastatic urothelial cancer (DENIM study)

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Introduction: Bone metastases are common in patients with metastatic urothelial cancer (mUC) and are associated with significant morbidity and mortality. In this randomized, double-blind, phase 2 study, we evaluated the efficacy and safety of adding denosumab, a monoclonal antibody against RANK ligand, or placebo to standard first-line platinum-based chemotherapy in mUC patients with bone metastases.

Methods: Patients with treatment-naive mUC planned for 4–6 cycles of standard 1 L platinum-based chemotherapy were randomized 1:1 to receive either denosumab 120 mg or placebo subcutaneously every four weeks with their first dose coinciding with the first cycle of chemotherapy. the primary endpoint was change in serum c-telopeptide (sCTX) from baseline (week 1) to week 10. Secondary endpoints were changes in other bone turnover markers like bone-specific alkaline phosphatase (bALP) and urinary N-telopeptide (uNTx), time to first symptomatic skeletal-related event (SRE), progression-free survival (PFS), and overall survival (OS) (NCT03520231).

Results: A total of six patients were enrolled before the study was closed due to poor accrual. Three received denosumab and three received placebo. Three

MP 9.12. Table 1. Treatment options (dilation and incision outcome for VUAS)

Status	Age (y/o), median (range)	VUAS occurrence interval after radical prostatectomy (days), median (range)	No. dilation, median (range)	No. incision median (range)	Total no. of procedures, median (range)	Post-dilation recurrence interval (days), median (range)	Post-incision recurrence interval (days), median (range)
Recurrence-free (n=31, 65.95%)	71.5 (57–80)	88 (30–1145)	1 (1–5)	1 (1–3)	2 (1–8)	24 (7–75)	107 (24–75)
Ongoing treatment (n=8, 17.02%)	71(61–80)	106 (39–1075)	1 (0–6)	1 (1–3)	2 (1–8)	24 (7–85)	104.5 (44–154)
Catheter-dependent (n=8, 17.02%)	72 (64–77)	106 (42–717)	1(1–4)	1(1–2)	2(2–6)	24 (8–37)	101 (54–176)
Total (N=47)	72 (57–80)	106 (30–1145)	1(0–6)	1 (1–3)	2 (1–8)	24 (7–85)	107 (24–154)

MP 9.14. Table 1. Summary of change in bone turnover marker from baseline (week 1) to week 10

Subject	Serum c-telopeptide (sCTX)	Bone-specific alkaline phosphatase (bALP)	Urinary N-telopeptide (uNTx)
1	-72.3 %	-33.1 %	-90.6 %
2	N/A	N/A	N/A
3	-92.8 %	-48.7 %	-73.9 %
4	N/A	N/A	N/A
5	N/A	N/A	N/A
6	+87.2 %	-19.1%	-1.6 %

patients completed the week 10 evaluation. The median age was 68 years, and three were female. Two showed a reduction in sCTX by more than 30%, and both patients received denosumab. Changes in other bone turnover markers, like bALP and urinary uNTx, were recorded and are shown in Table 1. The overall cohort had a median OS of 7 months (95% CI 4.3–not reached [NR]) and the median PFS was 4.8 months (95% CI 1.3–NR). Four out of six patients experienced SREs. The median time to the first SRE was 6.4 months (95% CI 1.9–NR). There was no significant difference in OS, PFS, or time to SRE between the denosumab and placebo groups. The most frequently reported treatment-related AEs were fatigue (4), anorexia (4), nausea (4), fever (3), and hypocalcemia (3).

Conclusions: Although the trial was underpowered due to low accrual, our data suggest that denosumab may be beneficial in reducing bone turnover. Given the significant morbidity and mortality of bone metastases in mUC, future trials investigating the efficacy and safety of bone-protecting agents in combination with novel systemic therapies appear warranted.

MP 9.15

Automated nephrometry scores through direct prediction of each component

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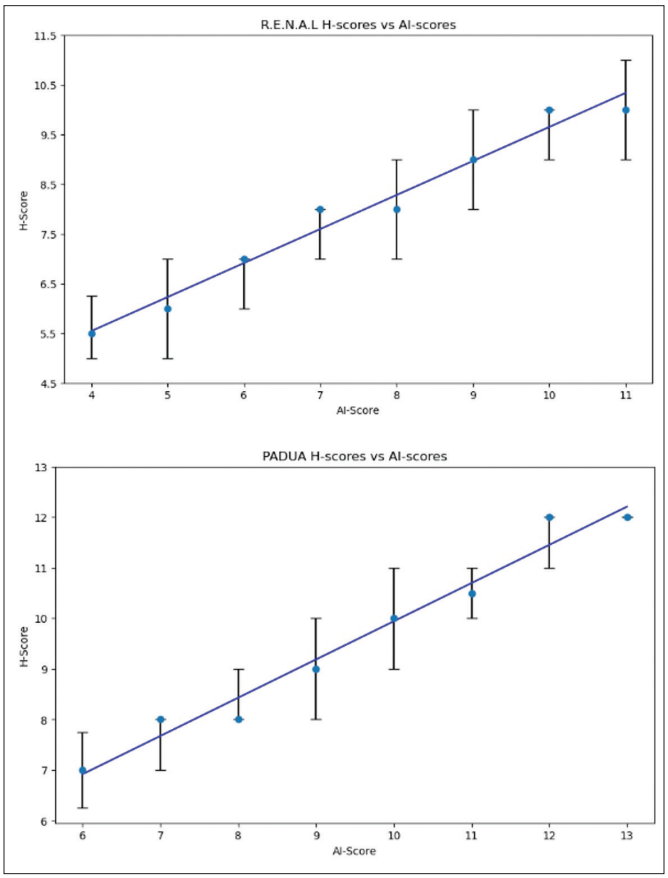
Introduction: Nephrometry scores quantify kidney tumor complexity. Manual calculation is time-consuming and prone to variability, potentially impacting treatment. This study uses AI to automate score generation. Unlike prior methods, we use a deep neural network to predict score components directly from CT images.

Methods: A total of 599 preoperative CTs from patients undergoing surgery for suspected renal malignancy were analyzed. A ResNet-50 deep neural network predicted each component of the RENAL and PADUA scores using CT images and kidney/tumor segmentation masks. Five-fold, cross-validation generated score predictions, compared against manual scores from six individuals. Accuracy was evaluated for predicting malignancy, high-grade pathology, and pT3+ stage. Agreement between AI and human scores was assessed using Lin's concordance correlation coefficient, and predictive abilities were evaluated using areas under the curve (AUC).

Results: AI-generated RENAL scores showed similar accuracy to human scores in predicting outcomes like nephron-sparing surgery (AI ROC 0.78 vs. human ROC 0.80, p=0.398) and pT stage ≥3 (AI ROC 0.71 vs. human ROC 0.72, p=0.467) (Figure 1A). AI-generated PADUA scores outperformed human scores in predicting nephron-sparing surgery (AI ROC 0.84 vs. human ROC 0.80, p=0.009) and pT stage ≥3 (AI ROC 0.76 vs. human ROC 0.71, p=0.018) (Figure 1B). Good agreement was observed between AI and human scores (RENAL Spearman's ρ=0.72, PADUA Spearman's ρ=0.75). Notably, lower agreement was found between individual human scores (Spearman's ρ=0.524) (Figure 2).

Conclusions: AI-generated scores showed greater agreement with the averaged human score than individual humans and exceeded human performance in predicting outcomes. Variability among human scores highlights potential inconsistencies in manual scoring. These findings suggest AI could enhance the accuracy and consistency of nephrometry scoring, improving decision-making in kidney cancer management. Future research should validate these findings and explore clinical integration.



MP 9.15. Figure 1. (A) RENAL score vs. AI scores. (B) PADUA scores vs. AI scores.

	RENAL Human ROC	RENAL AI ROC	p-Value	PADUA Human ROC	PADUA AI ROC	p-Value
Partial vs Radical	0.80	0.78	0.398	0.80	0.84	**0.009**
Minimally Invasive	0.66	0.65	0.773	0.70	0.70	0.877
Malignant	0.62	0.61	0.759	0.67	0.62	**0.037***
pT Stage 3 or 4	0.72	0.71	0.467	0.76	0.80	**0.018**
Necrosis	0.72	0.73	0.274	0.69	0.71	0.281
Grade 3 or 4	0.61	0.63	0.343	0.64	0.68	**0.017**
Readmission	0.52	0.55	**0.021**	0.51	0.54	0.217

Significance values defined as p < 0.05 in two-tailed DeLong's tests.
*In the case of predicting malignant vs benign renal masses using the PADUA score, the direction of the difference was in favor of the human score.

MP 9.15. Figure 2. Agreement between AI and human scores.