Poster Session 9: Oncology – Kidney, Other
Monday, July 1, 2024 • 7:00–8:30

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MP 9.1

Can we prevent a nephrectomy? The efficacy and safety of irreversible electroporation in treating challenging small renal cancers

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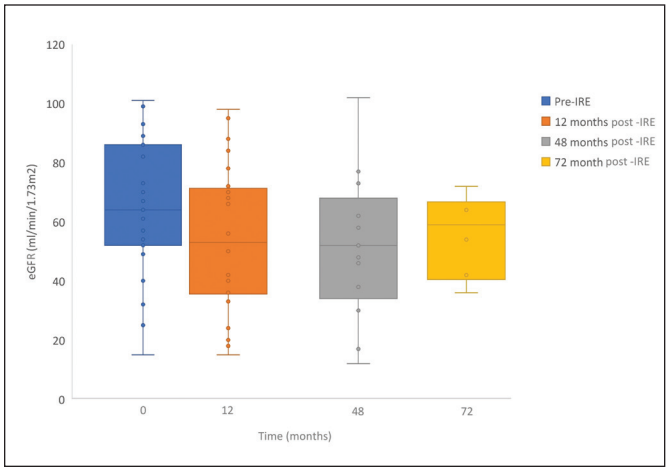
Introduction: Irreversible electroporation (IRE) is a novel, non-thermal ablation procedure used for treating small renal masses (SMR), such as renal cell carcinomas (RCC). This prospective case series explores IRE's effectiveness and six-year outcomes in patients with difficult-to-treat RCC. We report tumor-free survival (TFS) and document complications and renal function changes.

Methods: IRE was offered to patients with a biopsy-confirmed RCC in a solitary kidney, von Hippel Lindau syndrome, or a difficult-to-treat RCC that was deemed amenable only to radical nephrectomy for tumor control. Followup protocol at three, 12, 24, 36, 48, 60, and 72 months post-IRE included creatinine, eGFR, and gadolinium-enhanced MRI to monitor for residual or recurrent disease.

Results: Twenty-seven biopsy-proven RCC were treated in 27 patients. The median followup time was 42 months (range 3–72). Post-IRE, six patients experienced immediate adverse events (AE): four transient hematuria (Clavien-Dindo grade [CD] 1), one hematoma requiring transfusion (CD 2), and one PE (CD 2). One patient received a ureteral stent for a delayed ureteral stricture (CD 3a). At three months, residual tumors were found in five patients, making a treatment success rate of 81.5%. Four patients were managed with salvage thermal ablation (three microwave [MWA], one radiofrequency) and one patient underwent laparoscopic nephrectomy (LN). Four patients with recurrent RCC (mean time of 21 months) were managed with surveillance, MWA, and LN. No patient developed metastasis. The six-year TFS rate was 79.3%, with no deaths due to RCC. The average eGFR decline at 12 and 72 months was nine and 6.3 mL/min/1.73 m2, respectively.

Conclusions: This study demonstrates that patients with difficult-to-treat RCCs can be treated with IRE safely and effectively. Immediate AE were limited to CD 2 and fully resolved. The procedure success rate and the six-year TFS rate suggest that IRE is a feasible option for patients with complex SRM. Larger and longer studies are needed to evaluate long-term oncologic and functional outcomes.



MP 9.1. Figure 1. Box and whisker plots showing kidney function outcomes after IRE. X-axis shows measurements before IRS (blue), and on followups at 12, 48, and 72 months after IRE. Median lines are shown within the boxes

MP 9.1. Table 1. Patients' demographic and disease data

Median age (years)	65 (35–83)
Sex	
Male	17
Female	10
Median R.E.N.A.L. score	9 (4–10)
Mean tumor diameter (cm)	2.67 (1.3–4)
Pathology (n, %)	
Clear-cell RCC	19, 70%
Papillary RCC	5, 18.5%
Chromophobe RCC	3, 11%
VHL (n)	3
Solitary kidney (n, %)	4, 15%

MP 9.2

Long-term outcomes of surveillance of clinical stage I pure teratoma of the testicle

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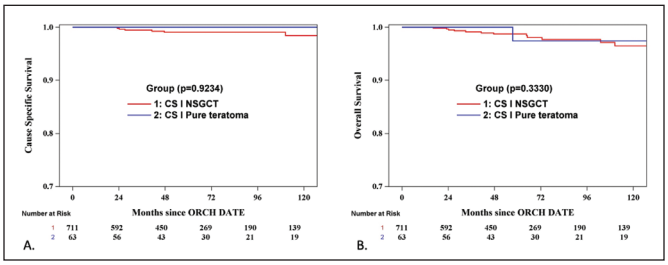
Introduction: Pure testicular teratomas make up 4–9% of all testicular tumors, and about 50% of mixed germ cell tumors contain teratomatous elements. Retrospective studies have shown that testicular tumors with teratomatous elements or pure teratoma in the initial pathology are associated with inferior oncologic outcomes, and this has raised questions if active surveillance should be the preferred strategy for these patients who present with clinical stage I (CSI) disease. This study aimed to evaluate the long-term oncologic outcomes of patients with CSI pure teratoma managed on active surveillance.

Methods: A retrospective analysis using data from our prospectively maintained active surveillance database was conducted. Patients diagnosed with CSI non-seminomatous germ cell tumors (NSGCTs) and pure teratoma on active surveillance between 1980 and 2023 were included. The primary endpoints was cancer-specific survival (CSS), while secondary endpoints included relapse-free survival (RFS) and cumulative incidence of relapse. Lastly, we report the salvage treatment strategies for patients with relapsed CSI pure teratoma

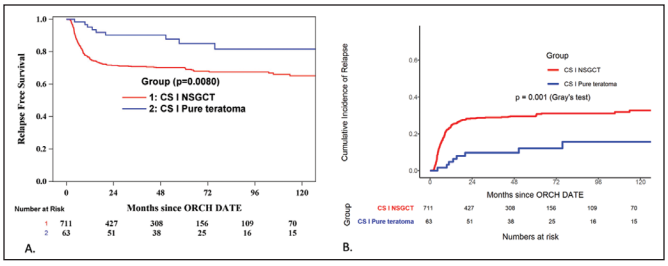
Results: A total of 774 patients were identified: 63 had pure teratoma and 711 had CSI NSGCTs or mixed germ cell tumors/seminoma with elevated markers treated as NSGCTs. The median followup was 61 months. The six-year CSS was 100% for the pure teratoma group vs. 99.1% for the NSGCTs (p=0.9234) (Figure 1). At last followup, 52 patients (82.54%) with pure teratoma were free of relapse.

The cumulative incidence of relapse at five years for the pure teratoma group was 12.2% vs. 29.6% for the CSI NSGCT group, this difference was found to be statistically significant (p=0.001) (Figure 2). Once relapsed, compared to the NSGCT group, the teratoma group was not more likely to be treated with surgery (37.5% vs. 38.2%) and the NSGCT group were more likely to be cured with single modality (72% vs. 50%).

Conclusions: This study provides valuable insights into the oncologic outcomes of CSI pure teratoma managed with active surveillance. Patients with pure teratoma demonstrated superior RFS and lower cumulative incidence of relapse compared to CSI NSGCTs. Notably, no significant differences were observed in OS or CSS between these two groups. These findings strongly suggest that active surveillance is not only a viable management option but should be the preferred treatment strategy for CSI pure teratoma patients. Our study revealed that employing adjuvant treatment would have resulted in unnecessary over-treatment for 87% of patients with pure teratoma.



MP 9.2. Figure 1. (A) Cancer-specific survival of CSI pure teratoma vs. CSI NSGCTs on active surveillance. (B) Overall survival of CSI pure teratoma vs. CSI NSGCTs.



MP 9.2. Figure 2. (A) Relapse-free survival of CSI pure teratoma vs. CSI NSGCTs on active surveillance (log-rank p=0.008). (B) Cumulative incidence of relapse (Gray's test p=0.001).

MP 9.3

Pre-procedure tranexamic acid for novel insights: Influence on perinephric hematoma incidence and hospitalization duration in renal cryoablation

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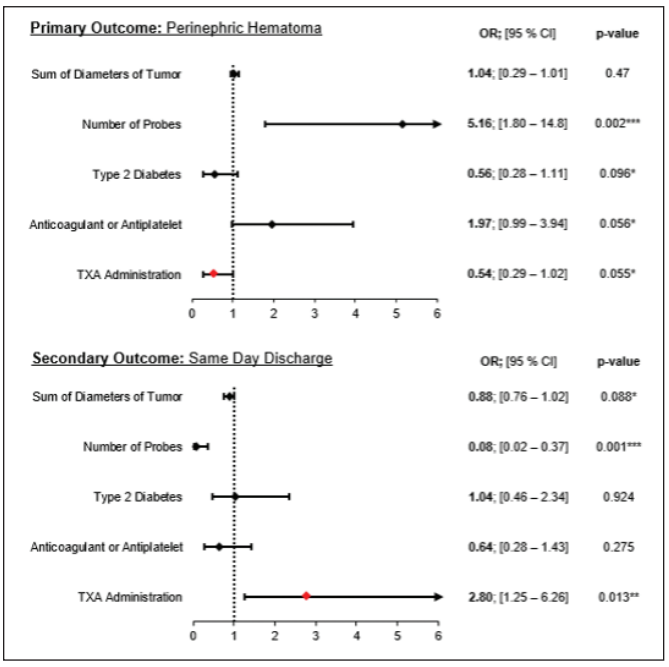
Introduction: Percutaneous renal cryoablation (PCA) is a minimally invasive alternative treatment for small renal masses. Prior research has investigated the use of tranexamic acid (TXA) in diverse urologic procedures, yet there is a no evidence regarding its application in PCA. This study assessed the efficacy of preoperative TXA in reducing postoperative perinephric hematoma formation.

Methods: Patients who underwent PCA of renal masses from June 2020 to June 2023 were analyzed. Cryoprobe placement and ice-ball formation were monitored via computed tomography (CT) imaging intraoperatively. Perinephric hematoma status was determined upon review of CT imaging performed at the end of the treatment. Preoperative IV TXA was regularly administered commencing August 2021. AIC-minimized generalized linear models with a logit link function were developed for the primary outcome of post-procedural perinephric hematoma and secondary outcome of same-day discharge. A Fisher's exact test was used to compare TXA and non-TXA groups.

Results: This study included 223 patients (TXA, n=118; non-TXA, n=105) with a median age of 65.8 years and a median followup of 15 months. There were relatively fewer postoperative perinephric hematomas in the TXA group (27.1%) when compared to the non-TXA group (39.1%) (Table 1). TXA administration was associated with an OR of 0.54 (95% CI, 0.29–1.01, p=0.055] when analyzing postoperative perinephric hematoma. Same-day discharge incidence was higher in the TXA group (88.1%) relative to the non-TXA group (76.2%). TXA was associated with an OR of 2.80 [95% CI 1.25–6.26, p=0.013] when analyzing same-day discharge (Figure 1). The Clavien-Dindo 3+ complication rate was 1.8%, overall local recurrence rate was 0.0%, and residual disease rate was 3.1% for the aggregate cohort.

Conclusions: This study provides novel evidence for the administration of preoperative TXA in reducing perinephric hematoma post-PCA, as well as increasing the likelihood of same-day discharge.



MP 9.3. Figure 1. Odds ratio outputs for AIC minimized logistics regression model for factors in determining perinephric hematoma and same-day discharge in PCA.

MP 9.3. Table 1. Comparison of perioperative characteristics by TXA status during PCA

Demographics	Total Cohort	TXA	No TXA	2-Tail Fisher's Test
Total Number of Patients (n)	223	118	105	*p-value > 0.5*
Male	147 (65.9%)	78 (66.1%)	69 (65.7%)	
Female	76 (34.1%)	40 (33.9%)	36 (34.3%)	
Age at treatment (yrs)	65.8	65.4	66.2	
Outcomes				
Same Day Discharge	184 (82.5%)	104 (88.1%)	80 (76.2%)	
Same Day Biopsy	156 (70.0%)	85 (72.03%)	71 (67.6%)	
Hematoma	73 (32.7%)	32 (27.1%)	41 (39.1%)	
Average Length of Stay (hours)	13.7	13	14.4	
Metastatic RCC after Cryoablation	0 (0.0%)	0 (0.0%)	0 (0.0%)	
Median Follow Up (months)	15	4	19	
Average Change in Hemoglobin (Pre - Post)	9.5	9.2	8.7	
Average Change in eGFR (Pre - Post)	-1.8	-1.6	-1.8	
Average Change in Creatinine (Post - Pre)	2.2	1.4	2.8	
Recurrence				
No Recurrence	210 (94.2%)	111 (94.1%)	99 (94.3%)	*p-value > 0.5*
Local Recurrence	0 (0.0%)	0 (0.0%)	0 (0.0%)	
Residual Disease	7 (3.1%)	3 (2.5%)	4 (3.8%)	
Repeat Cryoablation	5	2	3	
Radical Nephrectomy	2	1	1	
De Novo Recurrence	2 (0.9%)	1 (0.8%)	1 (1.0%)	
Repeat Cryoablation	2	1	1	
Radical Nephrectomy	0	0	0	
No Follow Up Imaging	4 (1.8%)	3 (2.5%)	1 (1.0%)	
Tumor Characteristics				
Average tumor dimension in cm	2.8	2.76	2.85	
Average number of probes	3	3	2.9	
Number of T1a tumors	153 (80.7%)	86 (81.4%)	84 (80.0%)	
Number of T1b tumors	23 (10.3%)	9 (7.6%)	14 (13.3%)	
Mass Without Diagnostic Biopsy	44 (19.7%)	22 (18.6%)	22 (21.0%)	
Nephrometry Score				
Nephrometry Score Average	6.38	6.43	6.32	*p-value > 0.5*
Low	122 (54.7%)	65 (55.1%)	57 (54.3%)	
Medium	91 (40.8%)	48 (40.7%)	43 (41.0%)	
High	10 (4.5%)	5 (4.2%)	5 (4.8%)	
Pathology				
Clear Cell	118 (52.9%)	63 (53.4%)	55 (52.4%)	*p-value = 0.202*
Papillary	28 (12.6%)	11 (9.3%)	17 (16.2%)	
Chromophobe	4 (1.8%)	4 (3.4%)	0 (0.0%)	
Mucinous Tubular/Spindle Cell	1 (1.8%)	1 (0.4%)	0 (0.0%)	
Sarcomatoid	0 (0.0%)	0 (0.0%)	0 (0.0%)	
Benign	17 (7.6%)	11 (9.3%)	6 (5.7%)	
Non-diagnostic/Normal	24 (10.8%)	14 (11.9%)	10 (9.5%)	
Other/No Biopsy	31 (13.9%)	14 (11.9%)	17 (16.2%)	
Fuhrman Grade				
I-II	117 (52.5%)	61 (51.7%)	56 (53.3%)	*p-value > 0.5*
III-IV	28 (12.6%)	15 (12.7%)	13 (12.4%)	
Not reported	78 (35.0%)	42 (35.6%)	36 (34.3%)	
Complications (Clavien-Dindo)				
Total	20 (9.0%)	15 (12.7%)	5 (4.8%)	
I-II	16 (7.2%)	13 (11.0%)	3 (2.9%)	
III-IV	4 (1.8%)	2 (1.7%)	2 (1.9%)	

MP 9.4

Surveillance for clinical stage I Leydig and Sertoli cell tumors: The Princess Margaret Cancer Centre experience

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Introduction: Testicular sex cord-stromal tumors (TSCST) are rare neoplasms, of which ~90% are estimated to be benign. Malignant behavior may be predicted by pathologic risk factors, but the presence of metastases remains the most reliable criterion. The role of retroperitoneal lymph node dissection remains debated in patients with clinical stage I (CSI) TSCST, with many patients undergoing surveillance even with high-risk pathologic features. We aimed to characterize long-term outcomes of TSCST patients undergoing surveillance.

Methods: A retrospective review of TSCST patients at Princess Margaret Cancer Centre from 1973–2023 was performed to identify patients with Leydig or Sertoli cell tumors. Pathology reports were reviewed for high-risk features associated with metastatic potential (tumor ≥5 cm, infiltrative margins, lymphovascular invasion, necrosis, nuclear atypia, high mitotic rate). Additional clinical data collected included demographic information, procedure type (radical/partial orchiectomy), laterality, metastatic relapse, and survival.

Results: Sixty-two patients with complete pathologic data were identified. Their clinical and pathologic features are presented in Table 1. The median age was 38.5 years. Most men underwent a radical orchiectomy (88.7%), with 11.3% undergoing partial. The most common histology was Leydig cell tumor (72.6%). No patients received adjuvant therapy. All tumors were unifocal, with a median diameter of 1.35 cm. Only 11 (17.7%) harbored high-risk pathologic features, with the majority (72.6%) having only one feature. One patient presented with asynchronous Leydig cell tumor primary (contralateral testicle) 28 years from first diagnosis, and another with de novo metastatic disease at diagnosis. Among 61 patients with CSI disease at presentation, none experienced relapse (median followup 15 months).

MP 9.4. Table 1. Characteristics of patients with Leydig and Sertoli cell tumors (N=62)

Median age at diagnosis (range)	38.5 (17–80)
Laterality (left)	29 (46.8%)
Positive serum tumor markers (baseline)*	2 (3.2%)
Orchiectomy type	
Radical	55 (88.7%)
Partial	7 (11.3%)
Histology	
Sertoli cell	16 (25.8%)
Leydig cell	45 (72.6%)
Sertoli-Leydig cell	1 (1.6%)
Pathologic features	
Unifocal	62 (100%)
Median size in cm (IQR)	1.35 (0.9–2)
Lymphovascular invasion	2 (3.2%)
Infiltrative margins	1 (1.6%)
Necrosis	3 (4.8%)
Nuclear atypia	4 (6.5%)
High mitotic rate (>3/10 HPF)	6 (9.7%)

*Alpha fetoprotein.

Conclusions: Most patients with TSCST present without high-risk pathologic features, and nearly all are localized at diagnosis, with a near-zero risk of relapse on surveillance. A surveillance strategy appears safe for those with CSI disease, although there is no evidence-based, agreed-upon schedule.

MP 9.5

Long-term outcomes of percutaneous cryoablation for small renal masses in young healthy patients

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Introduction: Percutaneous cryoablation (PCA) of renal masses has typically been recommended for elderly or comorbid patients with small renal masses (SRMs) who are thought to be unsuitable for surgery. In this study, we aimed to assess the long-term outcomes of percutaneous renal cryoablation in a large cohort of healthy young patients who would generally have a partial nephrectomy.

Methods: We identified patients ≤60 years old who underwent percutaneous cryoablation for solitary, non-metastatic small renal masses <4 cm (cT1a). Exclusion criteria consisted of patients with ASA scores ≥3, CKD (eGFR <60), genetic renal cell carcinoma, and significant prior abdominal surgery. All patients had cross-sectional imaging prior to the procedure and most underwent biopsy at the time of procedure. Cryoprobe placement and ice-ball formation were monitored via computed tomography (CT) imaging during the procedure performed by a urologist and radiology team. Data were collected via electronic medical record review, as well as pre-, intra-, and post-procedure imaging review. Data included demographics, tumor characteristics, pathology, local recurrence and metastatic disease rates, complications, pre- and post-procedure renal function and blood counts, and mortality rate of patients in followup.

Results: Between 2008 and 2021, 145 patients met our inclusion and exclusion criteria with a mean age of 52.8 years and a median followup of 4.5 years (Table

MP 9.5. Table 1. Demographic and oncologic data for healthy patients ≤60 years who underwent PCA for cT1a renal masses

	Total group	Age <50	Age 50–60
Total number of patients	145	49	96
Mean age at treatment (years)	52.8 (36.6–60)	45.2	56.5
Gender			
Male	87 (60%)	31 (63%)	56 (58%)
Female	58 (40%)	18 (37%)	40 (42%)
Prior nephrectomy			
Partial	4	2	2
Radical	1	1	0
Average tumour dimension (cm)	2.6 (0.9–4)	2.5 (0.9–4)	2.6 (0.9–4)
Average number of probes	2.6 (1–5)	2.6 (1–5)	2.7 (1–5)
Nephrometry score average	6	6	7
Low	85 (57%)	32 (65%)	53 (53%)
Medium	47 (32%)	14 (29%)	33 (33%)
High	10 (7%)	2 (4%)	8 (8%)
Pathology from biopsy at cryoablation			
Clear-cell	72 (50%)	26 (53%)	46 (48%)
Papillary	17 (12%)	5 (10%)	12 (13%)
Chromophobe	7 (5%)	2 (4%)	5 (5%)
Mucinous tubular/spindle cell	4 (3%)	1 (2%)	3 (3%)
Benign	24 (17%)	5 (10%)	19 (20%)
Non-diagnostic/normal	11 (7%)	7 (14%)	4 (4%)
No biopsy/Other	10 (7%)	3 (6%)	7 (7%)
Fuhrman grade			
I–II	67 (46%)	27 (55%)	40 (42%)
III–IV	11 (7%)	3 (6%)	8 (8%)
Median followup (months)	55	61	52
Average skin to tumor length (cm)			
Posterior	8	7.7	8.1
Lateral	9.3	8	9.9
Complications (Clavien-Dindo)			
Total	12 (8.3%)	4 (8%)	8 (8%)
I–II	8 (5.5%)	4 (8%)	4 (4%)
III–IV	4 (2.8%)	0	4 (4%)
No recurrence	138 (95%)	47 (96%)	91 (95%)
Residual disease (<1 year)	2 (1.4%)	0	2 (2.1%)

MP 9.5. Table 1 (cont'd). Demographic and oncologic data for healthy patients ≤60 years who underwent PCA for cT1a renal masses

	Total group	Age <50	Age 50–60
Residual disease (<1 year)	2 (1.4%)	0	2 (2.1%)
Repeat cryoablation then radical nephrectomy	1		1
Radical nephrectomy	1		1
De novo tumor recurrence	5 (3.4%)	2 (4.1%)	3 (3.1%)
Repeat cryoablation	4	2	2
Radical nephrectomy	1	0	1

1). The average size of the tumor was 2.6 cm and the average nephrometry score was 6. Four patients had a prior partial nephrectomy and one patient had a solitary kidney. Residual disease seen on CT within one year was 1.4%. No patient developed local recurrence (>1 year). De novo recurrence rate was 3.4%. No patient developed metastasis. Overall survival rate was 95% at the time of analysis. Cancer-specific survival overall was 100%. The average length of time to discharge was 25 hours. The Clavien-Dindo 3+ complication rate was 2.8%. **Conclusions:** In this cohort of healthy patients under 60 years old who underwent PCA for SRMs with long-term followup demonstrated excellent oncologic control with low complication rates and no local recurrence. This suggests PCA can be considered for younger, fitter patients who are still candidates for surgery for SRMs.

MP 9.6

A potential role for partial adrenalectomy in primary aldosteronism: Is preoperative imaging concordant with final pathology?

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Introduction: Primary aldosteronism (PA) is a common and underdiagnosed cause of hypertension in up to 10–20% of hypertensive patients.[1] Aldosterone-producing adrenal adenomas (APA) with a potential for surgical cure may represent up to 50% of these cases.[2] Significant interest has arisen regarding partial adrenalectomy for PA to mitigate the risk of adrenal insufficiency, but the literature remains unclear as to whether APA is reliably unifocal. Current literature suggests up to 27% of total adrenalectomy specimens for PA have multiple adrenal lesions on pathology.[3] We aimed to assess the reliability of preoperative imaging in determining the number of adrenal adenomas in the final pathology specimen, with an ultimate goal of identifying candidates for partial adrenalectomy.
Methods: We reviewed all patients undergoing adrenal vein sampling (AVS) for primary aldosteronism at a single institution from January 2018 to June 2022. Preoperative imaging, postoperative pathology, and data pertaining to hypertension management were collected. The outcome of each adrenalectomy was determined using PASO criteria.
Results: A total of 81 patients underwent AVS, of which 42 had unilateral disease. Thirty patients were treated with unilateral total adrenalectomy (22 right, eight left). Preoperative imaging identified 27 patients with a single nodule (90%), two patients with no nodule, and one patient with hyperplasia. On pathology, all specimens identified adrenocortical adenomas. Of those patients with a discrete nodule on CT or MRI, 93% (25/27) had a single adenoma on pathology. Improvement or cure of hypertension was achieved in 16 patients (59%).
Conclusions: Preoperative imaging is highly concordant with final pathology when a single adenoma is present. Partial adrenalectomy may be a reasonable alternative to total adrenalectomy in select primary aldosterone patients. Future study of larger patient cohorts is needed.

References:

1. Brown JM, Siddiqui M, Calhoun DA, et al. The unrecognized prevalence of primary aldosteronism: A cross-sectional study. *Ann Intern Med* 2020;173:10-20. https://doi.org/10.7326/M20-0065

MP 9.6. Table 1. Radiologic-pathologic correlation of adrenal specimens

Imaging findings (n=30)		Pathologic findings (n=27)	
Nodule side		Adrenalectomy side	
Right	18 (60%)	Right	20 (74%)
Left	7 (23%)	Left	7 (26%)
Bilateral	3 (10%)		
None	2 (7%)		
Number of nodules		Number of nodules	
0	2 (7%)	0	1 (3%)
1	27 (90%)	1	25 (93%)
Hyperplasia	1 (3%)	2	1 (3%)

2. Parmar MS, Singh S. Conn Syndrome. [Updated 2022 Sep 12]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2023 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK459197/
3. Ishidoya S, Ito A, Sakai K, et al. Laparoscopic partial vs. total adrenalectomy for aldosterone-producing adenoma. *J Urol* 2005;174:40-3. https://oi.org/10.1097/01.ju.0000162045.68387.c3

MP 9.7

Impact analysis of the Kidney Cancer Research Network of Canada consensus statement on renal mass biopsy in a community hospital system in Ontario

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Introduction: Renal mass biopsy (RMB) is an important diagnostic tool to guide the management of small renal masses (SRM). We aimed to analyze the impact of the Kidney Cancer Research Network of Canada (KCRNC) consensus statement on RMB1 in a community hospital setting.

Methods: A retrospective chart review and analysis was conducted at Trillium Health Partners of patients referred for SRM suspicious for RCC between May 2016 and April 2023. Demographic data, clinical and disease characteristics, biopsy (yes/no), and extirpative pathology were collected. Continuous variables were reported as medians (IQR); categorical variables were described with proportions. The patient characteristics with a RMB diagnosis before and after KCRNC statement were compared and contrasted using the Wilcoxon rank sum test for continuous variables and the Chi-squared test for proportions.

Results: The cohort included 502 patients with localized RCC with a median followup of 2.4 years. Of these, 152 (30%) patients had a RMB. Biopsy was diagnostic and non-diagnostic in 131 (86%) and 21 cases (14%), respectively. Among diagnostic biopsies, 126 (95%) were malignant. Histologic subtyping and grading of RCC was possible in 83% and 48% of cases, respectively. After biopsy, 133 (88%) patients had surgery, of which 88 (66%) had partial and 45 (34%) radical nephrectomy. The final pathology concordance was 99% (107/108) for biopsies with malignant pathology and 100% for benign biopsy results (4/4 oncocytoma and 1/1 angiomyolipoma) undergoing surgery. All non-diagnostic biopsies having surgery had a final malignant pathology (20/20). When comparing biopsy and treatment patterns before and after KCRNC consensus statement, we found a significant increase in overall (25% vs. 36%, p=0.011) and SRM (30% vs. 44%, p=0.021) biopsy rates. There was no significant reduction in surgical management rates for SRM with improved RMB rates (98% vs. 93%, p=0.302) (Table 1).

Conclusions: We found a significant increase in the use of RMB for the diagnosis and management of SRM in our patient population. The results may be partially attributed to the KCRNC consensus statement implementation. These results are encouraging and support further implementation of guideline-based practices.

Acknowledgements: THP data was captured into CKCis database and site-specific data was exported for local analysis.

MP 9.7. Table 1. Patient characteristics and treatment patterns

	Total	KCRNC consensus statement		p
		Before	After	
	N=502	n=258 (51%)	n=244 (49%)	
Age, y (IQR)	61 (53–69)	60 (53–69)	63 (53–70)	
Followup, y (IQR)	2.4 (1.2–4.1)	4 (2.8–5.1)	1.4 (0.7–2)	
Gender, n (%)				0.729
Female	167 (33)	8 4 (33)	83 (34)	
Male	335 (67)	174 (67)	161 (66)	
Clinical stage, n (%)				0.426
T1a	257 (51)	133 (52)	124 (51)	
T1b	130 (26)	71 (28)	59 (24)	
T2a	40 (8)	21 (8)	19 (8)	
T2b	28 (6)	15 (6)	13 (5)	
T3	47 (9)	18 (7)	29 (12)	
Kidney biopsy, n (%)	152 (30)	65 (25)	87 (36)	0.011
T1a	95 (37)	40 (30)	55 (44)	
T1b	41 (32)	18 (25)	23 (39)	
T2a	8 (20)	5 (23)	3 (15)	
T2b	3 (11)	1 (7)	2 (15)	
T3	5 (3)	1 (6)	4 (14)	
Kidney biopsy pathology, n (%)				0.337
Benign	6 (4)	4 (6)	2 (2)	
Malignant	125 (82)	54 (83)	71 (82)	
Non-diagnostic	21 (14)	7 (11)	14 (16)	
Nephrectomy after biopsy, n (%)	133 (88)	59 (91)	74 (85)	0.292
T1a	90 (94)	39 (98)	51 (93)	
T1b	35 (85)	16 (89)	19 (83)	
T2a	4 (50)	2 (40)	2 (67)	
T2b	1 (33)	1 (100)	–	
T3	5 (100)	1 (100)	2 (50)	

Reference:
1. Lavallée LT, McAlpine K, Kapoor A, et al. Kidney Cancer Research Network of Canada (KCRNC) consensus statement on the role of renal mass biopsy in the management of kidney cancer. *Can Urol Assoc J* 2019;13:377-83. https://doi.org/10.5489/cuaj.6176

MP 9.8

Proteinuria: An overlooked marker of renal function in kidney cancer surgery

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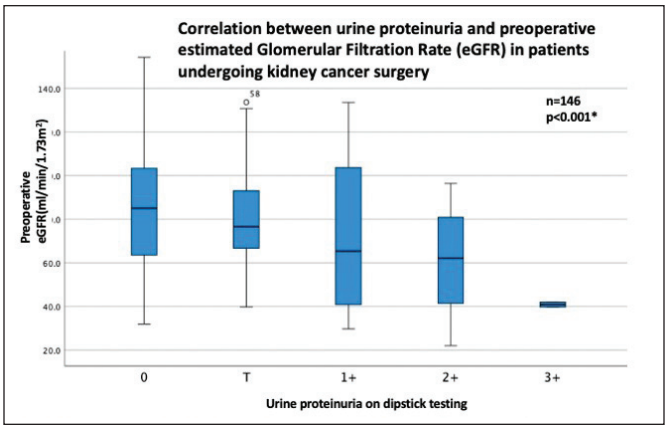
Introduction: While proteinuria is a known marker of renal disease, the link between degree of proteinuria and underlying histopathology in renal cancer (RCC) patients is less well-defined. We aimed to assess, for the first time in RCC, the association of: 1) preoperative proteinuria with preoperative renal function (RF) and non-neoplastic parenchyma (NNP) histology; and 2) proteinuria severity and one-year RF outcomes using an independent dataset.

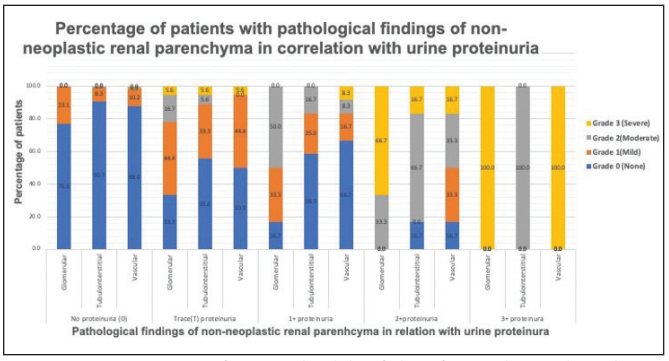
Methods: Patients undergoing RCC surgery were retrospectively evaluated from three institutions, excluding those with known nephropathy or solitary kidney. Proteinuria was recorded as none (0:<10 mg/dL), trace (T: 10–20 mg/dL), 1+(30 mg/dL), 2+ (100 mg/dL) and 3+ (300 mg/dL). In the first dataset, NNP, was evaluated by two nephropathologists for glomerular, vascular, and tubulointerstitial (TI) pathology (2010 College of American Pathologists criteria) and correlated to one-year followup serum creatinine (Cr) and eGFR. Then, two independent datasets meeting identical clinical inclusion criteria were captured, and multivariate linear regression performed to best predict one-year postoperative RF.

Results: In the first dataset, 146 patients had adequate NNP for assessment. The mean age (SD) was 57.1 years (12.2) and 70.5% (n=103) underwent radical nephrectomy (RN). Median preoperative Cr and eGFR were 0.96 (0.32–1) and 82.1(44.7–87.3) ml/min/1.73m2, respectively. On preoperative urinalysis (UA), 38 patients (26.1%) had trace or higher proteinuria. Preoperative eGFR was significantly associated with proteinuria severity (p<0.001) (Figure 1). Sixty-four (43.8%) patients had abnormal histopathologic findings, of whom 23 (51.6%) had proteinuria vs. five (6.1%) patients with proteinuria and normal NNP (p<0.001). The degree of glomerular, vascular, and TI disease in NNP correlated with proteinuria severity (Figure 2). Both Cr (p=0.005) and eGFR (p=0.024) at one-year followup were significantly worse in patients with abnormal NNP vs. normal NNP. In the combined dataset (n=532), the mean age was 58.2 years and 74% (n=352) underwent RN. Multivariate linear regression identified that degree of proteinuria (OR 2.43, p=0.008) and presence of hypertension (OR 2.83, p=0.005) were strong predictors of one-year serum Cr.

Conclusions: Proteinuria is a strong predictor of histopathology and worse RF at one-year followup. Preoperative use of UA can inform patients undergoing renal surgery.



MP 9.8. Figure 1. Correlation between urine proteinuria and preoperative eGFR in patients undergoing kidney cancer surgery.



MP 9.8. Figure 2. Percentage of patients with pathologic findings of non-neoplastic renal parenchyma in correlation with urine proteinuria.

MP 9.9

Outcomes and patient tolerability of radical inguinal orchiectomy under deep intravenous sedation

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Introduction: Radical inguinal orchiectomy (RO) is indicated for the management of testicular tumors and is universally performed under general or spinal anesthetic in the hospital. A similar procedure — inguinal hernia repair — is safely performed under deep intravenous sedation and local anesthesia. Thus, we sought to evaluate the feasibility of performing RO under deep intravenous sedation in an ambulatory surgery center.

Methods: We evaluated our single-surgeon (PP), prospective database of patients who underwent RO between September 2022 and December 2023 at the Men's Health Clinic Manitoba. Patients were given a combination of deep sedation, ilioinguinal nerve block, and local anesthetic. Tolerability was assessed both perioperatively and at 4–6 weeks followup. We reviewed the medical records for any postoperative complications.

Results: Twenty-five patients underwent RO under deep sedation during the study period. Patient demographics are listed in Table 1. All patients tolerated the surgery well and were discharged shortly after surgery. Operative and pathology data are listed in Table 2. Average operative time and length of stay were 38 minutes and 55 minutes, respectively. There were no perioperative complications. All surgical margins were negative. All patients expressed they would undergo the same procedure with deep sedation again.

MP 9.9. Table 1. Patient demographics

Characteristic	All subjects (N=25)
Age (years)	38.8 (19–72)
BMI	27.7 (21–45)
Testicular mass laterality Left Right	 13 12
ASA grade 1 2 3	 14 9 2
Ultrasound tumor size, cm (range)	3.2 (0.6–8.5)
No. of patients with abnormal preoperative tumor markers*	14 (56%)

*Defined as AFP >7, bHCG >3, LDH >215.

MP 9.9. Table 2. Operative data and pathology

Characteristic	All subjects (N=25)
Operative time (min)	38.2 (23–55)
Patient tolerance (%)	25 (100%)
Length of postoperative stay, min (range)	54.8 (30–93)
Average pain score at the time of discharge	2/10
Complications (%)	0 (0.0%)
Histopathology Seminoma, n (%) Non-seminoma, n (%) Diffuse large B-cell lymphoma Benign	 12 (48%) 8 (32%) 2 (8%) 3 (12%)
Pathologic stage pT1 disease pT2 disease	 15 (75%) 5 (25%)
Pathologic size of tumor, cm (range)	3.64 (0.7–9.3)
Negative margin status, n (%)	20 (100.0%)

Conclusions: Our study demonstrates that RO can be safely and effectively performed under deep sedation. This anesthetic combination can be used both in-hospital and out-of-hospital settings, thereby resulting in faster recovery, shorter length of stay, and favorable patient and provider satisfaction.

MP 9.10

Robotic-assisted partial nephrectomy: Initial experience with the Hugo™ robotic-assisted surgery platform

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Introduction: Robotic-assisted surgery (RAS) has been a vital modality in the armamentarium of minimally invasive surgeons over the past 20 years. The HUGOTM RAS system (Medtronic) is one of the newest platforms introduced to the market. Consequently, there is little comprehensive clinical data pertaining to the surgical outcomes of this system. This study aimed to describe our early experience performing robotic-assisted partial nephrectomy (RAPNx) on the HUGOTM RAS system.

Methods: We conducted a retrospective review of all patients who underwent a RAPNx with the HUGOTM RAS platform between April and December 2023 at the University Health Network. All procedures were performed by a single surgeon using a three-arm transperitoneal approach. Anesthetic, operative, and pathologic reports for each patient were assessed to collect pre-, intra-, and postoperative variables.

Results: Eleven patients were included. The mean age was 51 years, 45% (5/11) were female, mean ASA score was 2.73, mean BMI 31.3 kg/m2, 73% (8/11) had a right-sided mass, and mean tumor size was 2.9 cm. The mean warm ischemia time was 18.3 minutes, mean EBL 179 mL, and mean length of hospital stay 1.9 days. The mean robot docking time was 232 (range 120–389) seconds, mean total console time 93 (63–137) minutes, and mean skin-to-skin OR time 165.6 (123–229) minutes. There were no intraoperative complications and all cases were completed successfully as booked. Pathology review demonstrated that most tumors were a clear-cell variant (72.7%) and staged as pT1a (81.8%). All margins were negative.

Conclusions: This is the first North American, single-surgeon, case series using the HUGOTM RAS system for RAPNx. Our preliminary findings underscore that this platform is safe and effective for performing RAPNx, with comparable outcomes to other robotic platforms.

MP 9.11

Comprehensive scoring system predicts evidence-based management of adrenal incidentalomas

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Introduction: The objective of the study was to develop a precision scoring system to aid in the management of adrenal masses based on the most recent Canadian Urological Association (CUA) guideline for incidental adrenal masses.[1]

Methods: An adrenal risk-stratification model was developed by allocating points based on Hounsfield units (HU), functionality, size, and characteristics on second-line imaging (computed tomography [CT] or magnetic resonance imaging [MRI]). Points were allocated accordingly and totalled to five mutually exclusive outcomes and multiplied by a factor denoted as "T" if ancillary tests were recommended (Table 1).

Results: A total of 48 combinations of adrenal characteristics were accounted for in our scoring system. Ancillary tests were recommended in 33% of adrenal lesions with indeterminate functionality, leaving 32 incidentalomas for -concordance testing. All functional (n=14) and malignant lesions on CT or MRI (n=10) scored 80 points or more, suggesting adrenalectomy as per the CUA guideline. Benign, low-density, non-functional, <4 cm adenomas (n=1) scored 0 points, indicating no further followup. Low-density, non-functional, >4 cm lesions (n=1) scored 10 points, indicating repeat CT in 6–12 months. Repeat imaging in 3–6 months vs. adrenalectomy was recommended for all high-density, small or large, equivocal non-functional lesions (n=5). Non-functional incidentalomas with either low or high density and features suggestive of suspected metastasis (n= 5) scored 50–70 points, indicating possible biopsy or positron emission tomography (PET)/CT (Table 1).

Conclusions: Our scoring system provides CUA guideline-based recommendations for the management of adrenal incidentalomas. Further studies are required to validate this scoring system and assess its performance in various populations.

References:

1. Rowe NE, Kumar RM, Schieda N, et al. Canadian Urological Association guideline: Diagnosis, management, and followup of the incidentally discovered adrenal mass. *Can Urol Assoc J* 2023;17:12-24. https://doi.org/10.5489/cuaj.8248

MP 9.11. Table 1. Adrenal incidentaloma scoring system and outcome measures

Question	Points/factor
What is the Hounsfield units?	
<10 HU	0 points
>10 HU	10 points
Is it functional?	
No	0 points
Indeterminate	T
Yes	80 points
What is the size?	
<4 cm	0 points
>4 cm	10 points
Second-line imaging - Contrast-enhanced washout CT	
Relative washout >40% with absolute washout >60% (benign)	0 points
Relative washout <40% with absolute washout <60% (suggestive of other)	20 points
Relative washout <40% with absolute washout <60% (suggestive of metastasis with history of cancer)	50 points
Relative washout <40% with absolute washout <60% (suggestive of ACC)	80 points
Second-line imaging - Chemical shift MRI	
Microscopic fat with homogenous signal intensity drop (benign)	0 points
Heterogenous signal intensity dropout (suggestive of other)	20 points
Heterogenous signal intensity dropout (suggestive of metastasis with history of cancer)	50 points
Heterogenous signal intensity dropout (suggestive of ACC)	80 points
Outcomes	
No followup	0 points
Repeat CT in 6–12 months	10 points
Repeat imaging in 3–6 months vs. consider adrenalectomy	20–40 points
Consider biopsy or PET/CT	50–70 points
Adrenalectomy	80+ points
Ancillary tests recommended	T

MP 9.12

External validation of a predictive model for renal function one year following partial nephrectomy

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Introduction: A recently published predictive model was developed using the Veterans Affairs National Health System database to estimate glomerular filtration rate (GFR) one year following partial nephrectomy (PN). The coefficient of determination was (R2) of 0.66, and 82% of patients had a predicted GFR within 30% (P30).[1] The purpose of this study was to assess the performance of this model on patients from the renal hypothermia trial.[2]

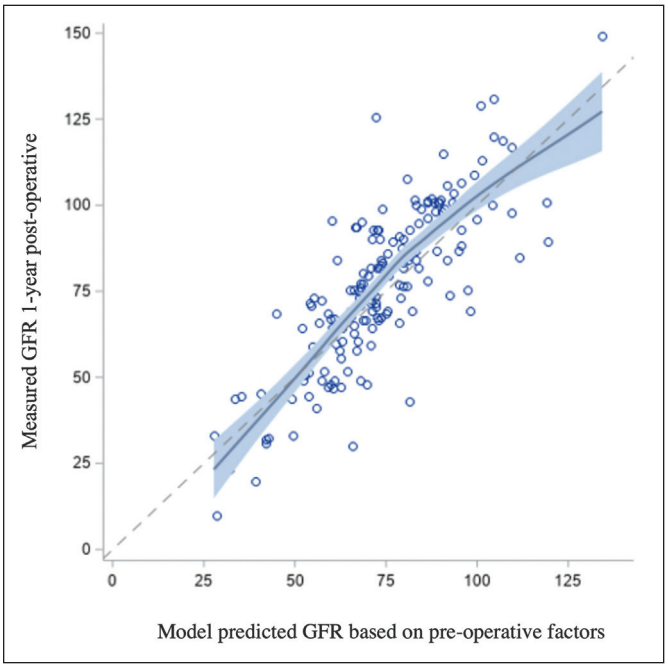
Methods: This external validation used patients from the renal hypothermia trial where GFR was measured using technetium-99mTc-diethylenetriamine pentaacetate (99mTc-DTPA) plasma clearance preoperatively and one year after partial nephrectomy. Performance was evaluated using metrics including R2, calibration slope, and P30. A calibration plot compared preoperative predicted GFR compared to actual measured GFR one year following partial nephrectomy.

Results: The cohort included 177 patients. The R2 was 0.67. The calibration slope was 1.04 and calibration plot showed good accuracy, especially at lower baseline GFR (Figure 1). The P30 predictive accuracy was 89.3%.

Conclusions: A recently developed GFR predictive model performed well when applied to patients with 99mTc-DTPA plasma clearance. We believe this model should be applied when counselling patients about expected renal function one year following partial nephrectomy.

References:

1. Aguilar PD, Wilson B, Ascha M, et al. New Baseline renal function after radical or partial nephrectomy: A simple and accurate predictive model. *J Urol* 2021;205:1310-20. https://doi.org/10.1097/JU.0000000000001549
2. Breau RH, Fergusson DA, Knoll G, et al. Hypothermia during partial nephrectomy for patients with renal tumors: A randomized controlled trial. *J Urol* 2021;205:1303-9. https://doi.org/10.1097/JU.0000000000001517



MP 9.12. Figure 1. Predicted GFR based on preoperative factors compared to measured GFR one year post-partial nephrectomy.

MP 9.13

Long-term outcomes of percutaneous renal cryoablation for Bosniak cysts

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Introduction: The Bosniak classification of cystic renal masses is an accepted system to predict the likelihood of cancer. Percutaneous cryoablation (PCA) is emerging as a minimally invasive treatment of small solid renal neoplasms. There is a significant paucity of data regarding cryoablation of Bosniak cysts. Herein, we evaluated the efficacy of PCA for the treatment of complex cystic renal masses. To our knowledge, this is the largest series of patients with Bosniak III and IV renal cysts that have been treated with PCA.

Methods: Patients included radiologist-confirmed Bosniak III, IV, or solid/cystic masses underwent PCA from 2006–2023. All patients had cross-sectional imaging prior to the procedure and most underwent biopsy at the time of procedure. Cryoprobe placement and ice-ball formation was monitored via computed tomography (CT) imaging during the procedure performed by a urologist and radiologist team. Data were collected via electronic medical record review, as well as pre-, intra-, and postprocedure imaging review. Data included demographics, tumor characteristics, pathology, local recurrence and metastatic disease rates, complications, pre- and post-procedure renal function and blood counts, comorbidities, and mortality rate of patients in followup.

Results: This study included 46 patients in the analysis with a median age of 63 years and median followup of 27 months (Table 1). There were 19 Bosniak III, 18 Bosniak IV, and 10 solid/cystic lesions. The average size of tumor was 2.54 cm. Average nephrometry score was 5.8. Of the 46 lesions, 24 were clear-cell RCC, 10 were non-diagnostic or non-neoplastic biopsies, five had no biopsies, four were benign, and three were papillary. Overall local recurrence rate was 2.2 % (n=1). This patient developed local recurrence at five-year followup and was successfully re-treated with cryoablation. No patient had metastasis. Overall survival rate was 91% at time of analysis. Overall cancer-specific survival was 100%. The Clavien-Dindo 3+ complication rate was 2.2%.

Conclusions: Long term PCA outcomes in this large patient cohort with complex cystic renal masses revealed an overall low recurrence rate, low complication rate, and acceptable biopsy rate. PCA may be considered as an alternative nephron-sparing approach for complex cystic renal masses with very acceptable outcomes.

MP 9.13. Table 1. Demographic and oncologic data for patients with cystic renal masses who underwent PCA

Total number of patients	46
Mean age at treatment (years)	63.1 (43.4–88.3)
Gender	
Male	29 (63%)
Female	17 (37%)
Prior RCC	
Partial	2
Radical	0
Bosniak classification	
III	19 (41%)
IV	18 (39%)
Cystic renal cell carcinoma	10 (22%)

MP 9.13. Table 1. Demographic and oncologic data for patients with cystic renal masses who underwent PCA

Average tumour dimension (cm)	2.54 (1.1–5.9)
Average number of probes	2.76 (1–5)
Nephrometry score average	5.8
Low	29 (63%)
Medium	12 (26%)
High	0
Pathology	
Clear-cell	24 (52%)
Papillary	3 (7%)
Chromophobe	0
Mucinous tubular/spindle cell	0
Benign	4 (9%)
Non-diagnostic/normal	10 (22%)
No biopsy/other	5 (11%)
Fuhrman grade	
I–II	18 (39%)
III–IV	2 (4%)
Median followup (months)	27
Average skin to tumor length	
Posterior	7.43
Lateral	7.65
Complications (Clavien–Dindo)	
Total	5 (11%)
I–II	4 (9%)
III–IV	1 (2%)
No recurrence	45 (98%)
Local recurrence	1 (2%)
Repeat cryoablation	1
De novo tumor recurrence (also treated with cryoablation)	1 (2%)

MP 9.14

Patients' values and preferences for treatment of small renal masses

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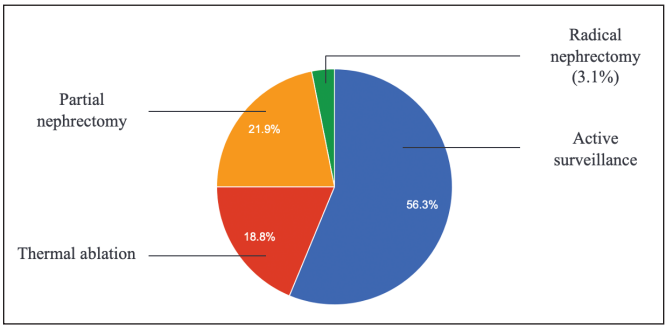
Introduction: Most patients diagnosed with small renal masses (SRMs) undergo invasive treatment (e.g., nephrectomy or thermal ablation), even though these masses may be benign or have low metastatic potential. Active surveillance (AS) has been proposed as an alternative to decrease overtreatment of SRMs. Data from observational studies suggest an increased mortality <1–2% when this approach is compared to invasive treatments. The study sought to determine patients' values and preferences regarding the management of their SRMs.

Methods: In this multicenter, prospective pilot, structured online interviews were conducted with asymptomatic patients newly diagnosed with SRMs and who had not yet chosen their treatment with their urologist. During these interviews, patients were first presented with outcomes data and asked their preference in terms of invasive treatment (i.e., nephrectomy vs. surgery). Next, patients were presented with hypothetical scenarios and were asked to choose, using a ping-pong approach, the maximum increase in the probability of death from kidney cancer that they would be willing to accept to decline an invasive treatment and choose AS.

Results: Thirty-six participants were interviewed. Of these, 70.3% preferred to be treated by thermal ablation (TA) rather than surgery. In addition, the median maximal increase in the probability of death from kidney cancer that they were willing to accept to avoid the negative aspects of an invasive treatment was 0.1% (IQR 0.1–6%). Nevertheless, 25% of patients reported a threshold ≥5%. The majority of patients preferred to be presented with data in the form of 'reduction in the risk of mortality,' as opposed to 'increase in the risk of death' or had no preference between both presentation methods. Despite the low-risk threshold reported by most patients, over 55% of patients opted for AS after meeting with their urologist.

Conclusions: Based on preliminary results, when presented with the best-available data, most of the patients interviewed preferred TA to surgery. When confronted with the different scenarios, the maximum increase in the probability of death from kidney cancer deemed acceptable for choosing AS rather than invasive treatment was 0.1% in most patients. Despite this low threshold, >55% chose AS as their treatment of choice after meeting with their urologist.

Acknowledgements: The authors would like to thank all the staff from every center for their work.



MP 9.14. Figure 1. Patients' final choice after consulting their urologist (N=32).

MP 9.15

The safety and feasibility of ambulatory minimally invasive partial nephrectomy: A systematic review and meta-analysis

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Introduction: Emerging evidence supports the use of minimally invasive partial nephrectomy (MIPN) in ambulatory settings. We conducted a systematic review and meta-analysis to evaluate differences in perioperative characteristics, complication/readmission rates, and satisfaction/cost data between ambulatory and standard-length discharge (SLD) MIPN.

Methods: This study was prospectively registered in PROSPERO (CRD42023429854). A systematic literature search of PubMed, Embase, and Web of Science databases was conducted, including studies comparing ambulatory MIPN vs. SLD MIPN for patients with renal masses. Studies were assessed for quality using the Methodological Index for Non-Randomized Studies score. Meta-analysis was performed for comparative studies, and non-comparative studies were included narratively.

Results: Eleven studies were included with a pooled population of 20 575 patients, of which 1419 (7%) had a length of stay of less than one day and were considered the ambulatory group. There were no significant differences in the total complication rates (RR 0.50, 95% CI 0.24, 1.04, p=0.06) or 30-day readmission rates (RR 0.87, 95% CI 0.56, 1.35, p=0.53) between the ambulatory and SLD groups. There were fewer >3 Clavien-Dindo complications in the ambulatory group (RR 0.34, 95% CI 0.19, 0.59; p=0.0002). Few studies reported average healthcare cost and patient satisfaction.

Conclusions: In appropriately selected patients, ambulatory MIPN is safe and feasible. Future studies are needed to quantify cost and patient satisfaction differences and further identify appropriate patient selection criteria for ambulatory MIPN.

MP 9.16

Survival analysis in stage I renal cell carcinoma among octogenarians: A comparative study on partial nephrectomy and radical nephrectomy

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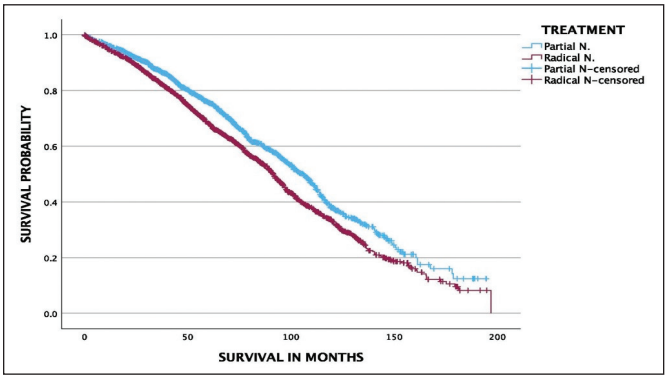
Introduction: Partial nephrectomy (PN) is the preferred first-line treatment for localized clinical T1 tumors. Studies have shown that PN has both survival and functional advantages and comparable oncologic outcomes to radical nephrectomy (RN). With the increase in age, the number of functional renal units decreases. Therefore, it is essential to understand the role of nephron-sparing procedures in the elderly population. In this study, we use the National Cancer Database to compare the survival outcomes between PN and RN among octogenarians.

Methods: Our study was on individuals above 80 years diagnosed with stage I disease (cT1N0M0) between 2004 and 2018. The primary cohort was divided into the PN and RN groups based on the treatment modality. Patients with a comorbidity score of ≥1 were excluded to reduce potential bias due to impaired renal function. A Kaplan-Meier analysis was performed to compare the survival outcome between these groups after propensity matching with sex, race, ethnicity, median income, insurance, facility type, clinical T, grade, histology, and tumor size.

Results: A total of 371 500 patients had T1 disease, and 6413 met our selection criteria; 2069 (32.3%) underwent PN and 4344 (67.7%) underwent RN. After propensity-matching, each group had 1874 patients. The overall survival (OS) for the PN and RN groups were 102.3 and 90.7 months, respectively (p<0.001) (Figure 1). In T1a tumors, the OS for PN and RN groups were 111.3 and 93.3 months; for T1b tumors, the OS was 87.1 and 85.1 months, respectively (p<0.001).

Conclusions: In our study on T1 tumors, PN showed better OS compared to RN. Similarly, in a subgroup analysis on T1a and T1b tumors, PN had better OS (111.3 and 87.1 months). Therefore, PN is beneficial among octogenarians in terms of OS.



MP 9.16. Figure 1.

MP 9.17

Assessment of other-cause mortality in adrenocortical carcinoma patients according to age and stage

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Introduction: We sought to assess the other-cause mortality (OCM) rate in adrenocortical carcinoma (ACC) patients after consideration of cancer-specific mortality (CSM). The rates of OCM are unknown in ACC patients. In specific ACC subgroups, OCM rates may be higher than in others and consideration of OCM might be particularly important in treatment decision-making.

Methods: Within the Surveillance, Epidemiology, and End Results (SEER) database from 2004–2020, we identified 1503 adult ACC patients of all stages with known followup. OCM represented the endpoint of interest. Cumulative incidence plots were generated to assess CSM-free survival (FS) and OCM-FS in the overall cohort and according to age groups as determined by quartiles. The relative proportion of death was also provided. Multivariable competing risks regression (CRR) models were fitted.

Results: A total of 1398 (93%) adults with known SEER stage were included. Of those, 364 were aged ≤45 years, 627 were between 46–64 years, and 407 were ≥65 years. Five-year OCM in the overall cohort was 10% vs. 58% CSM. According to age, OCM rates were 4% (≤45 years), 9% (46–64 years), and 17% (≥65 years), while CSM rates were 54%, 59%, and 61%, respectively. According to the SEER stage, OCM rates were 9% in localized, 12% in regional, and 9% in distant disease, while CSM rates were 32%, 57%, and 82%, respectively. In localized stage, patients aged ≥65 years had the highest OCM rate (19%) recorded, with the highest relative proportion of death due to other causes (34%) compared to younger individuals (10% in ≤45 and 17% in 46–64 years). In multivariable CRR models, age ≥65 years (HR 4.92 [2.83–8.57]) and male sex (HR 1.4 [1.02–1.93]) were independent predictors of OCM ($p<0.001$).

Conclusions: OCM represents a very important consideration in older patients with localized stage ACC and should be integrated into clinical decision-making, especially within this patient subgroup.