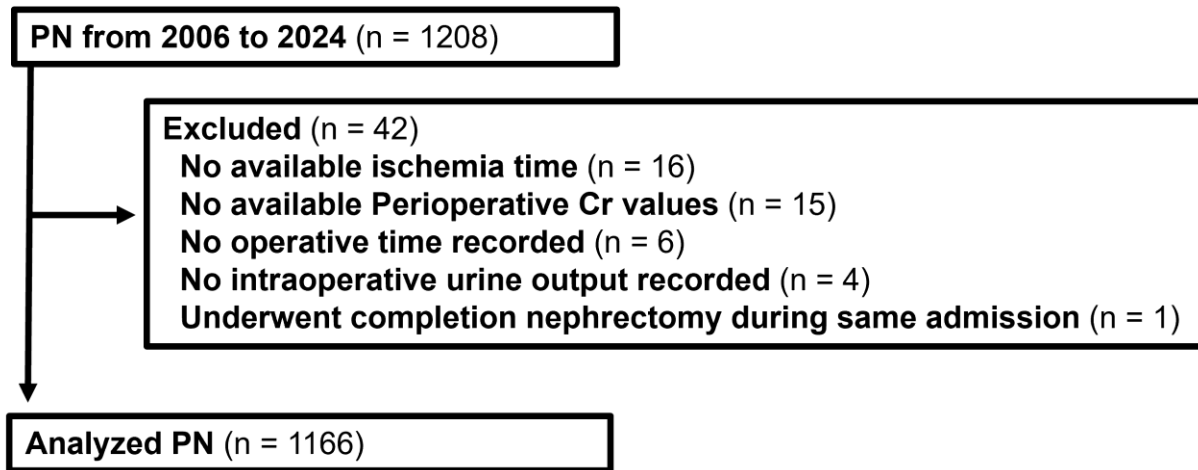


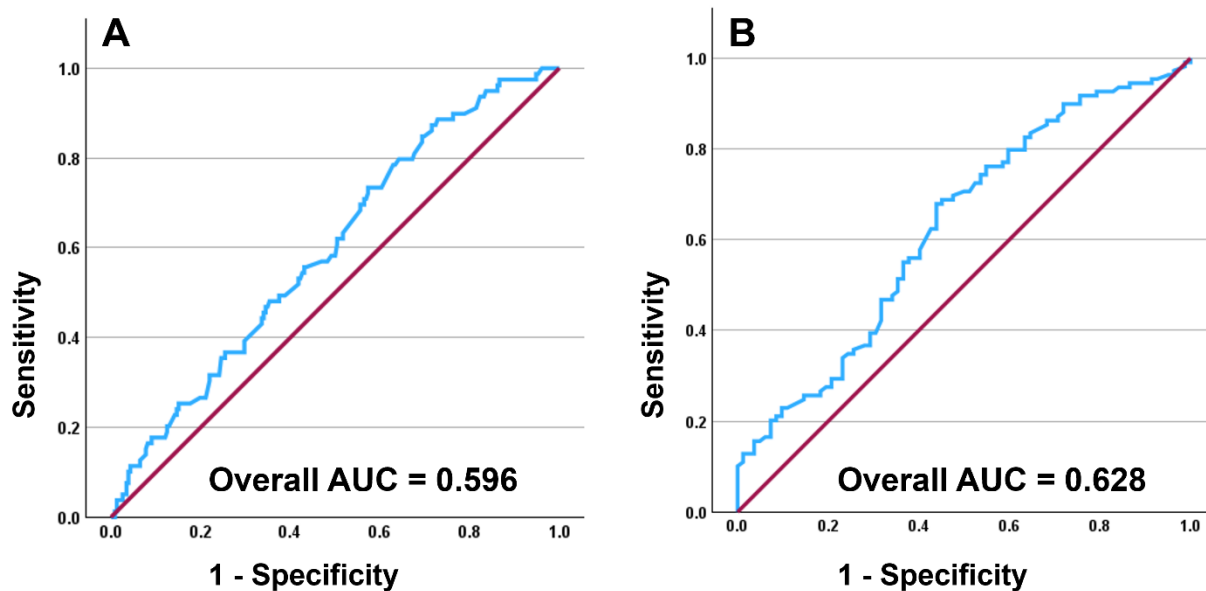
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APPENDIX

Supplementary Figure 1. Patient selection. PN: partial nephrectomy.



Supplementary Figure 2. Receiver operating characteristic (ROC) curves for AKI based on KDIGO (0 vs. 1, 2, or 3) on A) Index patients with bilateral native kidneys, undergoing first ipsilateral partial nephrectomy and with a single tumor removed (AUC 0.596, 95% CI 0.526–0.666, $p=0.007$); and B) patient with baseline eGFR <60 mL/min/1.73 m² removed (AUC 0.628, 95% CI 0.548–0.708, $p=0.002$).



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Supplementary Table 1. Description of the reported diagnosis per partial nephrectomy case.	
Reported diagnosis	Patients
<i>BAP</i> mutation	9 (0.8%)
BMF	174 (14.9%)
BHD	87 (7.5%)
HLRCC	58 (5.0%)
HPRC	21 (1.8%)
SDH-deficient renal cell carcinoma	11 (0.9%)
TSC	21 (1.8%)
VHL	550 (47.2%)
Sporadic renal cell carcinoma	69 (5.9%)
Others	166 (14.2%)

BMF: bilateral multifocal renal masses, BHD: Birt-Hogg-Dubé syndrome; HLRCC: hereditary leiomyomatosis and renal cell cancer; HPRC: hereditary papillary renal carcinoma; SDH: succinate dehydrogenase; TSC: tuberous sclerosis complex; VHL: von Hippel-Lindau disease.

Supplementary Table 2. Renal function outcomes at 3 and 12 months' followup of the analyzed patients according to the AKI KDIGO classification after partial nephrectomy						
Clinical variable	AKI KDIGO Classification					p
	Overall	0	1	2	3	
Baseline Cr (ng/dL)	1.0 [0.84–1.2]	0.96 [0.80–1.14]	1.05 [0.90–1.27]	1 [0.82–1.20]	1.33 [0.96–1.72]	<0.001
Baseline eGFR (mL/min/1.73 m ²)	86.3 [70.6–102.4]	87.3 [70.7–103.1]	80.1 [64.2–99.4]	81.8 [60.9–99.2]	60.1 [46.3–86.6]	<0.001
3 months Cr (ng/dL)*	1.05 [0.87–1.28]	0.96 [0.81–1.18]	1.14 [0.99–1.36]	1.12 [0.95–1.46]	1.8 [1.4–2.6]	<0.001
3 months eGFR (mL/min/1.73 m ²)*	78.7 [60.8–97.9]	85.2 [67.1–103.5]	72.6 [56.2–90.4]	69.4 [53.6–87.5]	40.7 [25.4–58]	<0.001
12 months Cr (ng/dL)**	1.06 [0.89–1.31]	0.99 [0.83–1.17]	1.17 [1.0–1.43]	1.21 [1.02–1.53]	1.68 [1.33–2.96]	<0.001
12 months eGFR (mL/min/1.73 m ²)***	76.9 [58.7–96.1]	83.2 [65–101.2]	71.2 [52.9–88.9]	63.8 [50.8–84.9]	42.8 [21.5–63.1]	<0.001

909 patients analyzed. *893 patients analyzed. Median [interquartile range 25th–75th].

Cr: serum creatinine; eGFR: estimated glomerular filtration rate; KDIGO AKI: Kidney Disease Improving Global Outcomes criteria for acute kidney injury. *1047 patients analyzed.

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Supplementary Table 3. Sensitivity, specificity, positive predictive value, negative predictive value, and accuracy of different EBL/UOP ratio cutoffs in the overall population, patients with bilateral native, solitary kidneys, and index patient population (patients with bilateral native kidneys undergoing first ipsilateral partial nephrectomy of a single tumor)					
	Overall				
EBL/UOP ratio	Sensitivity	Specificity	PPV	NPV	Accuracy
Ratio ≥ 0.5	90.9%	26.0%	46.6%	80.1%	52.9%
Ratio ≥ 1	76.9%	45.0%	49.8%	73.3%	58.2%
Ratio ≥ 2	54.8%	69.9%	56.4%	68.5%	63.6%
Ratio ≥ 3	38.4%	81.5%	59.6%	65.1%	63.6%
Ratio ≥ 4	26.7%	88.4%	62.0%	62.9%	62.8%
	Bilateral native kidneys				
EBL/UOP ratio	Sensitivity	Specificity	PPV	NPV	Accuracy
Ratio ≥ 0.5	89.4%	26.7%	43.0%	80.3%	50.6%
Ratio ≥ 1	73.7%	46.6%	46.1%	74.2%	57.0%
Ratio ≥ 2	50.3%	71.8%	52.4%	70.0%	63.5%
Ratio ≥ 3	33.8%	82.8%	54.9%	67.0%	64.1%
Ratio ≥ 4	23.0%	89.1%	56.5%	65.2%	63.8%
	Solitary kidney				
EBL/UOP ratio	Sensitivity	Specificity	PPV	NPV	Accuracy
Ratio ≥ 0.5	97.7%	14.6%	71.1%	75.0%	71.3%
Ratio ≥ 1	90.9%	19.5%	70.8%	50.0%	68.2%
Ratio ≥ 2	75.0%	41.5%	73.3%	43.6%	64.3%
Ratio ≥ 3	59.1%	61.0%	76.5%	41.0%	59.7%
Ratio ≥ 4	43.2%	78.0%	80.9%	39.0%	54.3%
	Index patients				
EBL/UOP ratio	Sensitivity	Specificity	PPV	NPV	Accuracy
Ratio ≥ 0.5	69.6%	44.4%	29.9%	81.1%	50.8%
Ratio ≥ 1	43.0%	66.4%	30.4%	77.4%	60.5%
Ratio ≥ 2	22.8%	85.8%	35.3%	76.5%	69.8%
Ratio ≥ 3	13.9%	92.2%	37.9%	75.9%	72.3%
Ratio ≥ 4	6.3%	96.6%	38.5%	75.2%	73.6%
	eGFR <60 mL/min/1.73 m²				
EBL/UOP ratio	Sensitivity	Specificity	PPV	NPV	Accuracy
Ratio ≥ 0.5	84.1%	6.4%	40.4%	35.0%	39.8%
Ratio ≥ 1	68.3%	14.7%	37.6%	38.1%	37.7%
Ratio ≥ 2	42.7%	37.6%	34.0%	46.6%	39.8%
Ratio ≥ 3	31.7%	57.8%	36.1%	52.9%	46.6%
Ratio ≥ 4	20.7%	71.6%	35.4%	54.5%	49.7%

EBL: estimated blood loss; NPV: negative predictive value; PPV: positive predictive value; UOP: urine output.

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Supplementary Table 4. Univariable logistic regression analysis to determine the association between clinical, demographic, and variables with AKI (KDIGO 0 vs. 1, 2, or 3), in the overall population (n=1166), patients with bilateral kidneys (n=1037), and solitary kidney (n=129)									
	Overall			Bilateral kidneys			Solitary kidney		
	OR	95% CI	p	OR	95% CI	p	OR	95% CI	p
Age at surgery (per 1 year)	1.006	0.997–1.014	0.205	1.001	0.991–1.010	0.907	1.021	0.987–1.056	0.225
Female	0.552	0.432–0.706	<0.001	0.490	0.374–0.641	<0.001	0.977	0.460–2.075	0.952
Race									
White	1			1			1		
Black/African American	1.508	1.064–2.137	0.021	1.715	1.192–2.468	0.004	0.706	0.186–2.677	0.609
Asian	1.780	0.877–3.610	0.110	1.720	0.818–3.616	0.152	□□		
Other, multiracial, not reported	1.512	1.009–2.265	0.045	1.542	0.993–2.395	0.054	1.035	0.332–3.229	0.952
Diabetes mellitus	1.366	1.001–1.864	0.049	1.517	1.085–2.121	0.015	0.497	0.208–1.188	0.116
Hypertension	1.356	1.073–1.712	0.011	1.351	1.051–1.737	0.019	1.197	0.569–2.515	0.636
Baseline eGFR (per 10 mL/min/1.73 m ²)	0.888	0.844–0.933	<0.001	0.918	0.868–0.971	0.003	0.994	0.836–1.182	0.949
Approach									
Open	1			1			1		
Robotic	0.429	0.334–0.551	<0.001	0.452	0.344–0.594	<0.001	0.892	0.408–1.952	0.775
Laparoscopic	0.879	0.448–1.725	0.707	1.170	0.570–2.403	0.669	0.139	0.014–1.411	0.095
Solitary kidney	3.474	2.349–5.138	<0.001	–	–	–	–	–	–
Partial nephrectomy count									
1	1			1			1		
2	1.392	1.039–1.865	0.027	1.410	1.028–1.933	0.033	0.767	0.325–1.806	0.543
3	2.371	1.556–3.613	<0.001	1.975	1.229–3.176	0.005	2.146	0.708–6.503	0.177
≥ 4	3.376	1.614–7.062	0.001	2.555	1.157–5.646	0.020	–		
Tumors removed (per 1 tumor)	1.107	1.080–1.135	<0.001	1.095	1.067–1.123	<0.001	1.156	1.058–1.264	0.001
Largest tumor removed (per 1 cm)	1.197	1.115–1.286	<0.001	1.212	1.126–1.305	<0.001	1.396	0.983–1.984	0.062
Overall ischemia time (per 1 minute)	1.021	1.014–1.028	<0.001	1.024	1.017–1.032	<0.001	1.018	0.991–1.045	0.193
Operative time (per 10 minutes)	1.083	1.070–1.097	<0.001	1.082	1.068–1.096	<0.001	1.091	1.045–1.140	<0.001
EBL/UOP ratio (per 1 unit)	1.178	1.125–1.233	<0.001	1.159	1.102–1.219	<0.001	1.138	1.021–1.268	0.020

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Supplementary Table 5. Multivariable-adjusted logistic regression analysis to determine the association between clinical, demographic, and variables with AKI (KDIGO 0 vs. 1, 2, or 3) in an index patient with bilateral native kidneys who underwent first partial nephrectomy of a single tumor (n=311) and patients with eGFR <60 mL/min/1.73 m² (n=191)

	Index patient			< 60 mL/min/1.73 m ²		
	OR	95% CI	p	OR	95% CI	p
Age at surgery (per 1 year)	0.991	0.964–1.019	0.529	1.009	0.974–1.045	0.619
Female	0.287	0.137–0.598	<0.001	1.133	0.553–2.320	0.733
Race						
White	1			1		
Black/African American	2.008	0.765–5.270	0.157	1.116	0.461–2.706	0.807
Asian	0.385	0.031–4.756	0.457	–		
Other, multiracial, not reported	5.724	1.750–18.718	0.004	0.960	0.260–3.548	0.951
Diabetes mellitus	2.058	0.804–5.323	0.134	1.413	0.610–3.269	0.420
Hypertension	0.884	0.412–1.898	0.752	1.009	0.505–2.018	0.980
Baseline eGFR (per 10 mL/min/1.73 m ²)	0.954	0.769–1.183	0.667	0.997	0.688–1.446	0.988
Approach						
Open	1			1		
Robotic	0.586	0.249–1.381	0.222	0.536	0.239–1.203	0.131
Laparoscopic	2.927	0.767–11.171	0.116	0.331	0.023–4.787	0.417
Solitary kidney	–			1.809	0.805–4.063	0.467
Partial nephrectomy count						
1	–			1		
2	–			0.563	0.219–1.445	0.232
3	–			0.657	0.236–1.831	0.422
≥ 4	–			1.492	0.313–7.122	0.616
Tumors removed (per 1 tumor)	–			1.052	0.967–1.143	0.238
Tumor size (per 1 cm)	1.102	0.938–1.295	0.237	1.023	0.820–1.276	0.843
Overall ischemia time (per 1 minute)	1.052	1.029–1.076	<0.001	1.019	0.996–1.042	0.108
Operative time (per 10 minutes)	1.094	1.055–1.134	<0.001	1.059	1.018–1.101	0.004
EBL/UOP ratio (per 1 unit)	1.023	0.893–1.172	0.743	1.065	0.953–1.190	0.266