

Table S1a and b. Comparison of complications, patient- and tumour characteristics.

	Radical nephrectomy	Partial nephrectomy	<i>P</i> value ^a
Treatments, no. (%)	2886	2105	
Gender (%)			0.013
Male	1859 (64.4)	1427 (67.8)	
Female	1027 (35.6)	678 (32.2)	
Age (yr) (IQR)	68 [60-76]	65 [54-73]	<0.001
BMI (IQR)	26 [24-31]	27 [24-32]	<0.001
Missing data	3	3	
ASA score (%)			<0.001
1	432 (15.0)	382 (18.2)	
2	1460 (50.5)	1199 (57.0)	
3	910 (31.5)	509 (24.2)	
4	75 (3.0)	12 (0.6)	
Missing data	9	3	
Tumour diameter (mm) (IQR)	70 [50-110]	30 [20-43]	<0.001
Missing data	3	1	
pT-stage (%)			<0.001
T1-2	1629 (56.6)	2010 (95.6)	
T3-4	1257 (43.4)	94 (4.4)	
Missing data	10	4	
eGFR (ml/min/1.73 m²) (IQR)	66 [53-78]	73 [62-84]	<0.001
Missing data	16	14	
Tumour histology (%)			<0.001
Clear cell	2301 (80.0)	1404 (66.8)	
Papillary	299 (10.0)	412 (19.6)	
Chromophobe	197 (7.0)	203 (9.6)	
Collecting duct	13 (0.5)	1 (0)	
Unclassified renal cell carcinoma	76 (2.5)	85 (4.0)	
Clavien-Dindo I-V complications (%)			
General complication	289 (10.0)	259 (12.3)	0.012
Surgical complication	481 (16.7)	361 (17.1)	0.516

Data are shown as median [interquartile range] and frequencies (%). Percentages are calculated after excluding missing data.

	Open technique	Minimally invasive technique	<i>P</i> value ^a
Treatments, no. (%)	2794	2197	
Gender (%)			0.881
Male	1837 (65.8)	1449 (66.0)	
Female	957 (34.2)	748 (34.0)	
Age (yr) (IQR)	68 [58-74]	66 [57-73]	0.001
BMI (IQR)	27 [24-30]	27 [24-30]	0.44
ASA score (%)			<0.001
1	424 (15.2)	390 (17.8)	
2	1442 (51.7)	1217 (55.4)	
3	860 (31.0)	559 (25.4)	
4	57 (2.1)	30 (1.4)	
Tumour diameter (mm) (IQR)	60 [38-93]	40 [25-60]	<0.001
pT-stage (%)			<0.001
T1-2	1799 (64.4)	1840 (83.8)	
T3-4	995 (35.6)	356 (16.2)	
eGFR (ml/min/1.73 m²) (IQR)	68 [54-79]	71 [60-82]	<0.001
Tumour histology (%)			0.029
Clear cell	2102 (75.2)	1603 (73.0)	
Papillary	368 (13.2)	343 (15.6)	
Chromophobe	214 (7.7)	186 (8.5)	
Collecting duct	9 (0.3)	5 (0.2)	
Unclassified renal cell carcinoma	101 (3.6)	60 (2.7)	
Clavien-Dindo I-V complications (%)			
General complication	392 (14.0)	156 (7.1)	<0.001
Surgical complication	614 (22.0)	233 (10.6)	<0.001

^a Continues variables were compared using Mann-Whitneys test and categorical variables compared using a Fishers exact test.

Table SII. Multivariable logistic regression of patient and tumour related variables predicting major post operative complications within 90 days after renal cancer surgery

All treatments		
Variables	Estimate (OR, 95% CI)	<i>p</i>-value
Gender (female vs male)	0.87 (0.70, 1.09)	0.234
Age	0.99 (0.98, 1.00)	0.113
BMI	0.99 (0.97, 1.01)	0.480
ASA score (3-4 vs 1-2)	1.90 (1.54, 2.34)	<0.001
Tumor diameter (log-2)	1.30 (1.17, 1.46)	<0.001
S-Creatinine (log-2)	1.28 (1.07, 1.54)	0.009

Table SIII a/b. Multivariable logistic regression of patient, tumour and surgery related variables predicting major post operative complications within 90 days after radical (a) and partial (b) nephrectomy.

a.

Radical nephrectomy		
Variables	Estimate (OR, 95% CI)	<i>p</i>-value
Gender (female vs male)	0.97 (0.72, 1.30)	0.852
Age	0.99 (0.98, 1.01)	0.305
BMI	1.00 (0.97, 1.02)	0.909
ASA score (3-4 vs 1-2)	2.37 (1.80, 3.12)	<0.001
Tumor diameter (log-2)	1.40 (1.14, 1.72)	<0.001
S-Creatinine (log-2)	1.35 (1.08, 1.68)	0.010
Surgical technique (O vs MI)	2.10 (1.53, 2.93)	<0.001

b.

Partial nephrectomy		
Variables	Estimate (OR, 95% CI)	<i>p</i>-value
Gender (female vs male)	0.79 (0.55, 1.12)	0.189
Age	1.00 (0.98, 1.01)	0.661
BMI	0.98 (0.95, 1.01)	0.255
ASA score (3-4 vs 1-2)	1.37 (0.97, 1.91)	0.074
Tumor diameter (log-2)	1.47 (1.15, 1.88)	0.002
S-Creatinine (log-2)	1.18 (0.81, 1.72)	0.387
Surgical technique (O vs MI)	1.77 (1.27, 2.47)	<0.001

Table SIV. Multivariable logistic regression for predicting death within 90 days after radical and partial nephrectomy.

Variables	Estimate (OR, 95% CI)	p-value
Gender (female vs male)	0.88 (0.50, 1.47)	0.627
Age	1.00 (0.98, 1.02)	0.975
BMI	0.98 (0.93, 1.03)	0.389
ASA score (3-4 vs 1-2)	3.38 (2.07, 5.62)	<0.001
Tumor diameter (log-2)	1.88 (1.29, 2.78)	<0.001
S-Creatinine (log-2)	1.35 (0.88, 1.95)	0.159
Surgical type (RN vs PN)	0.52 (0.23, 1.12)	0.097
Surgical technique (O vs MI)	2.39 (1.30, 4.69)	0.004

Table SV. Multivariable logistic regression for predicting major post operative complications within 90 days, using both pre and intra operative predictors

Treatment	Radical nephrectomy		Partial Nephrectomy	
Variables	Estimate (OR, 95% CI)	p-value	Estimate (OR, 95% CI)	p-value
Gender (female vs male)	1.10 (0.81, 1.48)	0.530	0.87 (0.60, 1.25)	0.456
Age	0.99 (0.98, 1.00)	0.189	1.00 (0.98, 1.01)	0.604
BMI	0.98 (0.95, 1.01)	0.166	0.96 (0.93, 1.00)	0.027
ASA score (3-4 vs 1-2)	2.19 (1.66, 2.91)	<0.001	1.37 (0.97, 1.92)	0.075
Tumor diameter (log-2)	1.20 (0.98, 1.48)	0.074	1.29 (1.01, 1.66)	0.044
S-Creatinine (log-2)	1.30 (1.02, 1.63)	0.032	1.12 (0.76, 1.63)	0.575
Surgical technique (O vs MI)	1.63 (1.13, 2.36)	0.008	1.62 (1.12, 2.34)	0.01
Operation time (log-2)	2.12 (1.69, 2.66)	<0.001	2.00 (1.45, 2.76)	<0.001
Estimated bleeding (200-500 vs <200 ml)	1.20 (0.79, 1.86)	0.387	1.68 (1.11, 2.57)	0.013
Estimated bleeding (>500 vs <200 ml)	1.97 (1.31, 2.98)	0.001	1.96 (1.24, 3.12)	0.004