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PARTIAL VERSUS RADICAL NEPHRECTOMY IN CLINICAL T2 RENAL MASSES

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INTRODUCTION

- Comparative outcome data on radical vs partial nephrectomy in T2 renal masses are scarce

- *OBJECTIVE*:
  - To report on
    - perioperative
    - renal function
    - oncologic outcomes
  - of partial versus radical nephrectomy in single institution experience

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METHODS

- 2000-2016 sporadic renal masses cT2 M0
- Radical and partial nephrectomy
- Outcomes:
  - Complications (Clavien-Dindo):
    - Overall and severe (Clavien III-V)
  - Renal function:
    - eGFR at 1 year (± 3 months)
    - eGFR at 3 years (± 9 months)
    - New onset of eGFR <60 (CKD III)
    - New onset of eGFR <15 (ESRD)
  - Oncologic outcomes (RCC only):
    - Overall, progression-free and cancer-specific survival

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STATISTICAL METHODS

- Propensity scores for RN (vs PN) via logistic regression with clinical and radiographic variables.

- Association with RN/PN and perioperative, renal function and oncologic outcomes assessed after reweighting with stabilized inverse probability weights

- Oncologic outcomes assessed in RCC subset: Cox PH regression after reweighting with stabilized inverse probability weights

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RESULTS

- 554 patients:
- 479 RN
- 75 PN:
  - Older
  - Larger tumors
  - Lower eGFR

	Partial nephrectomy N=75	Radical nephrectomy N=479	
Variable	Median (IQR)		P-value
Age at surgery in years	56 (47-64)	62 (53-70)	0.001
eGFR at diagnosis (N=75:472)	77 (62-90)	68 (56-80)	0.001
Charlson score	0 (0-2)	0 (0-2)	0.4
BMI in kg/m^2	29 (25-34)	29 (26-34)	0.2
Tumor size in cm	8.4 (7.5-10.0)	9.3 (8.0-11.0)	<0.001
	n (%)		
Male	41 (55)	306 (64)	0.13
Minimally-invasive approach	5 (7)	127 (27)	<0.001
Multifocality	1 (1)	15 (3)	0.7
2018 cT			
cT2a	63 (84)	318 (66)	0.002
cT2b	12 (16)	161 (34)	
Histologic subtype			
Benign	22 (29)	36 (8)	<0.001
RCC	53 (71)	443 (92)	

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RESULTS - COMPLICATIONS

	partial nephrectomy	radical nephrectomy	
Outcome			P-value
All Patients		n (%)	
Any complication (N=73:373)	15 (21)	47 (13)	0.10
Severe complication (N=73:373)	3 (4)	8 (2)	0.16
Subset with RCC			
Any complication (N=51:338)	9 (18)	44 (13)	0.3
High-grade complication (N=51:338)	3 (6)	6 (2)	0.02

RESULTS – RENAL FUNCTION

	PN	RN	
Outcome			P-value
All Patients		Median (IQR)	
Change in eGFR at 1 year (N=36:227)	-5 (-7 to 0)	-16 (-25 to -8)	<0.001
Change in eGFR at 3 years (N=40:249)	-2 (-8 to 6)	-13 (-23 to -2)	<0.001
Subset with RCC			
Change in eGFR at 1 year (N=30:211)	-1 (-6 to 0)	-16 (-25 to -8)	<0.001
Change in eGFR at 3 years (N=32:225)	3 (-7 to 7)	-13 (-22 to -2)	<0.001

	PN	RN	
Outcome			P-value
All Patients		n (%)	
eGFR at 1 year <60*	4 (17)	87 (55)	<0.001
eGFR at 3 years <60*	4 (17)	85 (48)	0.009
eGFR at 1 year <15†	0	1 (<1)	NE
eGFR at 3 years <15†	3 (8)	2 (1)	NE
Subset with RCC			
eGFR at 1 year <60*	1 (5)	82 (56)	<0.001
eGFR at 3 years <60*	1 (6)	78 (50)	<0.001
eGFR at 1 year <15†	0	0	NE
eGFR at 3 years <15†	3 (9)	1 (<1)	NE

*Evaluated on the subset with eGFR at diagnosis ≥60.
†Evaluated on the subset with eGFR at diagnosis ≥15.
NE: Not evaluated because there were 5 or fewer patients with the outcome of interest.

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RESULTS – ONCOLOGIC OUTCOMES

- Median follow up: 6.9 (3.7-11.6) years

- RN vs PN not associated with:
  - OS : HR=0.80, 95%CI 0.50-1.29, p=0.4
  - CSS : HR=1.18, 95% CI 0.56-2.50, p=0.7
  - PFS: HR=1.50, 95% CI 0.81-2.78, p=0.19

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CONCLUSION

- In select patients with large renal tumors PN is associated with:
  - Acceptable complication rates
  - Significantly better preservation of renal function to 3 years
  - Significantly lower rates of new onset CKD III

- Partial nephrectomy should be considered in select patients with clinical T2 renal masses.

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