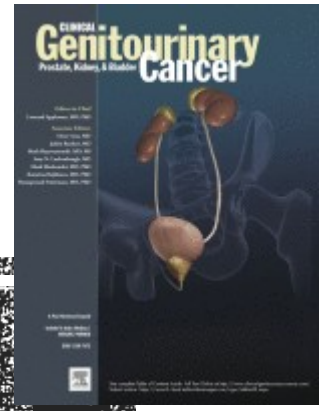

PREVALENCE OF POSITIVE SURGICAL MARGINS IN LOCALIZED RENAL CELL CARCINOMA AFTER SURGICAL RESECTION: PREDICTIVE FACTORS AND SURVIVAL IMPLICATIONS

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Clinical Genitourinary Cancer, Vol. 22, No. 4, 102110 © 2024

INTRODUCTION

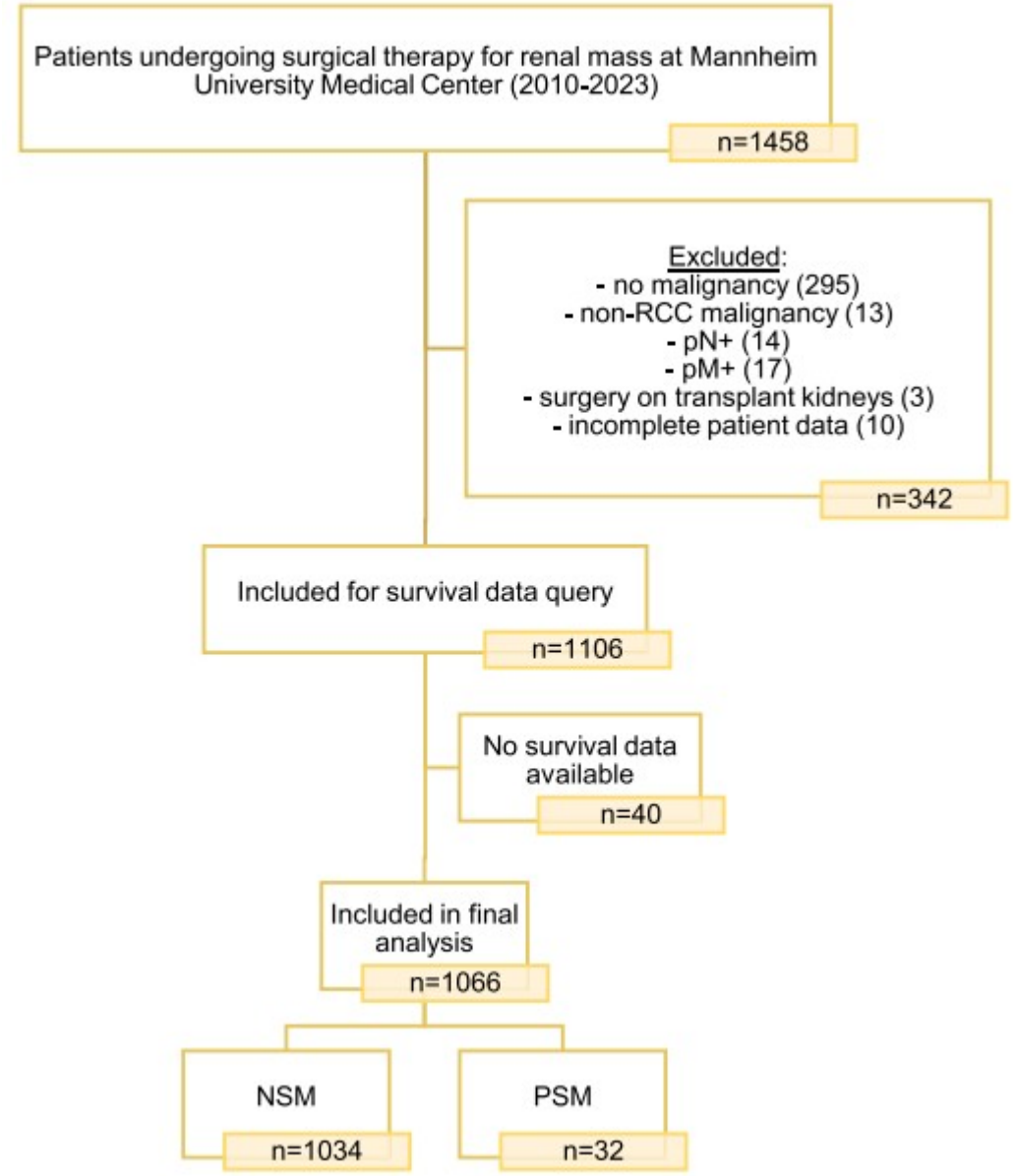
- Localized RCC often treated via partial or radical nephrectomy
- PSM (Positive Surgical Margins): 2–18% incidence.
- Local recurrence:PSM: 16%NSM: 3%.
- Frozen section analysis: No definitive benefit in PSM prediction
- **Mixed evidence** on impact on survival (OS and cancer-specific)

STUDY GOALS

1. To identify risk factors for PSM
2. To elucidate the impact of PSM on OS
3. To determine predictors of OS

METHODS SUMMARY

- Design – Retrospective study (2010 – 2023)
- University Medical Center Mannheim, Germany
- Sample: 1066 patients
- PSM cohort (n=32) vs. matched NSM controls (n=96)



METHODS SUMMARY

- Median follow-up was 45 (±39) months
- Analyses:
  - Logistic regression (PSM predictors)
  - Cox regression & Kaplan–Meier - (OS analysis)

RESULTS

KEY PREDICTORS OF PSM

- Independent predictors of PSM:
  - Tumor stage ≥ T3a (OR 2.74, P = .04)
  - Chromophobe RCC vs. clear cell (OR 3.19, P = .03)

- Note: PN vs RN and robotic surgery not independently predictive.

UNIVARIABLE AND MULTIVARIABLE LOGISTIC REGRESSION FOR THE PREDICTION OF POSITIVE SURGICAL MARGINS

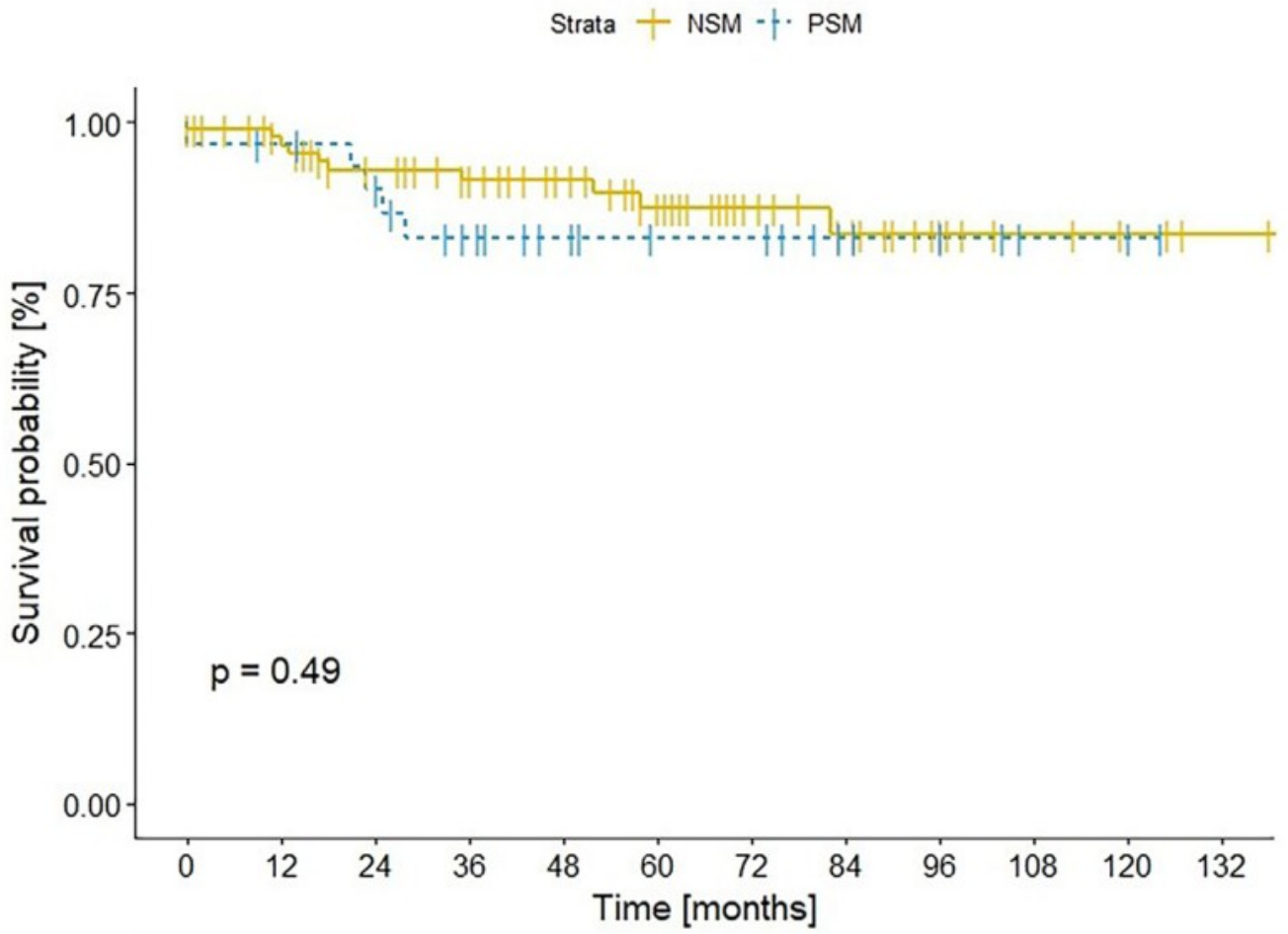
Variables	Univariable Regression				Multivariable Regression			
	OR	95% CI	SE	*P*-Value	OR	95% CI	SE	*P*-Value
Solitary kidney, yes vs. no	2.67	0.6-7.6	0.63	.13				
Tumor size, > 4 vs. ≤ 4 cm	1.53	0.8-3.1	0.36	.24	1.69	0.7-4.1	0.45	.25
Multifocality, yes vs. no	2.54	0.7-6.8	0.55	.09	1.33	0.1-6.9	1.05	.78
RENAL, > 8 vs. ≤ 8	1.14	0.5-2.5	0.39	.74	0.79	0.3-1.9	0.45	.79
MAP, > 3 vs. ≤ 3	1.52	0.6-4.5	0.49	.40				
Approach, PN vs. RN	0.63	0.3-1.5	0.42	.26				
Robot-assisted vs. open	0.92	0.4-2.0	0.40	.84				
Tumor stage, ≥ T3a vs. < T3a	3.43	1.6-7.1	0.38	**< .01**	2.74	1.0-6.8	0.48	**.04**
Grade, ≥ 3 vs. < 3	1.32	0.5-3.1	0.46	.55				
Histology								
Clear cell RCC	*Reference*				*Reference*			
Papillary RCC	2.0	0.9-4.4	0.41	.09	2.14	0.8-5.2	0.56	.09
Chromophobe RCC	3.14	1.2-7.8	0.41	**.02**	3.19	1.0-8.7	0.54	**.03**

KEY PREDICTORS OF OVERALL SURVIVAL (OS)

- **Worse OS linked to**:
  - Age > 65 (HR 2.65, P < .01)
  - Tumor stage ≥ T3a (HR 2.25, P < .01)
  - PSM > 1 mm showed trend but not statistically significant
- **Improved OS:**
  - Partial nephrectomy (HR 0.49, P = .02)

KAPLAN-MEIER SURVIVAL ANALYSIS

- No significant OS difference between PSM and NSM (P = 0.49)
- Emphasizes PSM alone is not prognostic, but other clinical factors matter



CLINICAL IMPLICATIONS

- PSM by itself does not predict poor OS
- Surveillance should be risk-adapted:
  - Tumor stage, size, grade, and PSM length
- Avoid over-treatment but ensure timely intervention

CONCLUSION

- PSM alone is not a reason for aggressive intervention
- Multivariable risk-based follow-up is key
- Age, tumor stage, and nephrectomy type are better OS predictors
- Further large-scale studies needed

THANK YOU