Incidence of Benign Renal Masses in a Contemporary Cohort of Patients Receiving Partial Nephrectomy for Presumed Renal Cell Carcinoma.

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Introduction

- Advances in diagnostic imaging have led to increased detection of small renal masses (SRM), as well as an improved ability to differentiate malignant from benign masses such as lipid poor AML and complex benign renal cysts
- Partial nephrectomy (PN) has been established as the gold standard treatment for majority of these T1 tumors
- With increasing utilization of active surveillance (AS), renal mass biopsy (RMB) and improved imaging, we sought to examine the incidence of benign pathology at the time of PN in a contemporary cohort of patients undergoing PN for presumed RCC

Methods

- Retrospective chart review of a prospectively maintained database of patients undergoing PN between 1/1/2006 and 12/31/2019 for suspected RCC
- Cystic renal masses or definitive benign pathology were excluded
- Pre-operative characteristics, trends in incidence and type of benign pathology (AML, oncocytoma, or other) was analyzed
- Statistical analysis using Student’s T test for continuous variables, Chi-squared for categorical variables, and univariate linear regression for trendlines

Results

- Analysis included 1083 patients, with 210 patients (19.4%) identified to have benign disease on final pathology
- Of patients with benign pathology, 49 (23%) had AML and 135 patients (64%) had oncocytoma
- On univariate analysis, patients who had benign pathology were more likely to be female (46% vs 28%, p<0.001), have a tumor size ≤ 4 cm (85% vs 79%, p<0.05) and more likely to have multifocal disease (8% vs 5%, p<0.01)
- Age (62.5 years vs 61.3 years), BMI (28 vs 29), and rates of pre-operative MRI (65% vs 67%) were comparable between both groups.
- Between 2006 to 2019, there was a significant increase in the incidence of benign pathology (R²=0.29, p<0.05).
- When examining 3-year rolling averages over this same time period, the incidence of oncocytoma appeared to increase (51% to 59%) while the incidence of AML decreased (49% to 30%).

Conclusion

The overall incidence of benign pathology in this contemporary cohort of patients undergoing PN for presumed RCC did not decline over time. Despite improvements in imaging as well as increased utilization of renal mass biopsy and active surveillance, benign renal masses, particularly oncocytoma, continue to pose a diagnostic challenge in patients with solid small renal masses.