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Renal Mass Ablation in the Octogenarian and Nonagenarian Population

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Introduction: The gold standard for the management of T1a and T1b renal tumors is partial nephrectomy. This study aims to analyze the outcomes of renal mass thermal ablations as an alternative therapy in the octogenarian and nonagenarian patient population, specifically.

Methods: Departmental database of all percutaneous renal ablations performed between February 2008 and August 2019 was reviewed. 34 tumors were ablated in 19 males and 15 females with a mean age of 84.1 ± 3.1 years (range 80-92 years). Patient demographics, procedural and postprocedural data were evaluated.

Results: Ten microwave and 24 cryoablations were performed, all ablations were performed under CT guidance for 27 T1a and 7 T1b renal tumors (1.4-5.9cm). The mean Charlson comorbidity index was 6.7. Thirty-one ablations were performed as the primary management, 3 were performed for tumor recurrence following partial nephrectomy (2) or prior ablation (1). The average number of probes used in cryoablation was 3.3 compared to 2.7 probes used in microwave ablation. Overall complication rate in cases in the 31 cases in which there was sufficient follow up was 23% and major complication rate was 13%, including two episodes of bleeding requiring red blood cell transfusion. Additionally there was one incidentally detected pseudoaneurysm in the ablation cavity of an asymptomatic patient which was subsequently embolized more than one year following the ablation. The mean pre procedure creatinine was 1.20 and mean creatinine at least 3 months post procedure

was 1.23. Of the 25 patients with at least 3 months of CT or MR follow up, there was no local recurrence and median follow-up was 23.7 months (range 1.1-94.9 months).

Concurrent biopsies were performed in 31 of the 34 cases. The pathology showed a majority of clear cell renal cell carcinoma (15), followed by oncocytic neoplasm (7), nondiagnostic specimen (4) and papillary renal cell carcinoma (3).

Discussion: Thermal ablation of renal masses in the elderly population is an effective treatment option with a low recurrence rate. Complications are higher than previously reported in the literature which may be related the advanced age and comorbidities of these patients.