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## Brief Correspondence

# Management of Small Renal Masses <2 cm: Treatment

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According to current European guidelines, a patient with a small renal mass (SRM; <2 cm) can be offered active surveillance (AS), tumor ablation (TA), or partial nephrectomy (PN) [1]. The management strategy will consider patient preferences and prioritize potential harms associated with each of these options. AS is widely accepted as an initial patient management option, especially in those unfit for surgery. However, up to 20–25% of patients who are first offered AS may experience disease progression during follow-up, with a subsequent need for active treatment [2]. In particular, a recent analysis from the Mayo Clinic showed that masses up to 2 cm have an estimated 84% likelihood of malignancy, and an 18% likelihood of aggressive histology [3]. In this context, a renal mass biopsy might be recommended as a useful tool to help in selection of the most appropriate management strategy [4]. Nevertheless, renal biopsy has several limitations. First, up to 20% of core biopsies are nondiagnostic and the diagnostic accuracy of a biopsy is even lower for masses of smaller size [5]. Moreover, in this context, renal biopsy might be not entirely adequate in discriminating possible intratumor heterogeneity. In addition, in cases with multiple or bilateral renal masses, recent evidence points to histology discordance in possibly up to 20% of cases [6]. Finally, considering patient-related features, renal biopsy might result in what could be termed “over-diagnosis” in elderly and particularly frail patients, for whom no active treatment would be suitable and only radiological follow-up could be recommended.

The patient's point of view might have a considerable impact on the choice of treatment for SRMs. Sotimehin et al [2] showed that patients who underwent primary intervention for a SRM reported higher quality of life because of a perceived benefit in the physical health domain, despite the stress of surgical intervention. Conversely, patients on AS had intrusive thoughts and avoid-

ance behavior leading to greater uncertainty. Given these premises, it is clear that any type of active treatment represents a therapeutic option that can overcome AS limitations.

PN has progressively emerged as the preferred treatment option for clinical T1 renal masses because of well-known benefits in terms of functional preservation [7] and oncological safety [8]. Moreover, the advent of robotic surgery has considerably reduced the probability of complications and the overall surgical morbidity [9]. A recent multicenter study reporting robot-assisted PN (RAPN) experience in 352 patients presenting with a renal mass <2 cm has shown interesting results [10]. The authors reported a median operative time of 140 min and a median warm ischemia time of 14 min for this cohort of patients. Interestingly no major (Clavien-Dindo ≥3) postoperative complications were recorded, suggesting that RAPN may represent a minimally invasive management option for “very small” renal masses, as it has favorable perioperative outcomes and a minimal risk of complications. In terms of oncologic outcomes, the disease recurrence and progression rates in this series were 0.8% and 0.7%, respectively, at median follow-up of 37 mo. The experience at our institution, which is a tertiary referral center, confirms these data. The rate of conservative surgery for masses <2 cm was 100% between 2017 and 2023, and these cases represented 16% of PN procedures performed for cT1 renal cell carcinoma (RCC). The median operative time was 94 min and the median ischemia time was 8 min, with no major complications reported.

The aforementioned outcomes are even more encouraging when compared to those for other active treatment options (mainly TA). A meta-analysis of ablative therapies for very small renal masses reported a global complication rate of 12.5% and a recurrence rate of 5% at median follow-up of 5 yr [11]. Of course, oncologic outcomes following TA may significantly differ according to different RCC subtypes, with clear-cell RCC having the worst prognosis. As

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regards renal function preservation, RAPN for SRMs <2 cm was associated with a very small change in estimated glomerular filtration rate between baseline and 1-yr follow-up (median 5.6 ml/min), reflecting minimal kidney injury secondary to reductions in ischemia time and excisional volume loss [10]. In comparison to PN, TA led to a similar change in renal function in the very early postoperative period and at 3-mo assessment, while at 6-mo and 1-yr follow-up, TA was even associated with lower renal function impairment [11]. Such outcomes should be thoroughly discussed with patients when offering different active treatment options [12].

Ablative therapies represent a valid option when active treatment is the preferred choice and the patient is not fit for surgery. However, careful selection is required for these options, as tumor location (ie, endophytic and perihilar masses) can considerably reduce their applicability. In addition, tumor biopsy, with all its limitations, is needed before the treatment. By contrast, PN has shown excellent and durable results in contemporary series of patients with SRMs and is minimally affected by tumor location and growth. Moreover, noninferior outcomes have been observed in cohorts of frail and comorbid patients, providing evidence of the low invasiveness of this surgery [13]. Nevertheless, it is paramount to understand that the use of robotic assistance and the surgeon's experience are key elements in maximizing outcomes.

**Conflicts of interest:** The authors have nothing to disclose.

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