

# Current Trends in Renal Surgery and Observation for Small Renal Masses

Siri Drangsholt, MD<sup>a</sup>, William C. Huang, MD<sup>b,\*</sup>

## KEYWORDS

• Kidney cancer • Surgery • Treatment trends • Observation

## KEY POINTS

- Surgical management remains the mainstay for treatment of small renal masses.
- Although partial nephrectomy is the gold standard, its uptake has been slow and disparities continue to exist.
- Ablation and active surveillance are emerging options that may be preferable in certain populations but their use remains low and patient selection criteria remain poorly defined.

With more than 62,700 incident cases and 14,240 deaths in the past year, kidney cancer is the third most common cancer of the urinary tract.<sup>1</sup> There has been a steady increase over the past 20 years in the detection of kidney lesions assumed to be renal cell carcinoma, thought to be in part caused by a rise in image use. The incidence rates of small renal masses (SRMs) characterized as less than 4 cm, in particular, has been rising and is even more pronounced in the elderly population.<sup>2,3</sup> With studies reporting an increase of 330% in computed tomography use over the last decade, renal masses are progressively more common and can present a therapeutic dilemma to physicians.<sup>4</sup>

Historically, the rising incidence of renal cell carcinoma is paralleled with an increase in the number of nephrectomies performed.<sup>2,5</sup> In the last decade, however, clinicians have begun to better understand the biology and natural history of SRMs. Several observations have been made leading to a shift in the management. For tumors that are less than 4 cm, more than 20% have benign pathology and less than 20% have

aggressive features, indicating that many tumors do not require treatment.<sup>6</sup> Furthermore, it has been noted that despite aggressive management of renal masses, mortality rates among older patients with renal cell carcinoma and significant comorbidities have remained fixed over the past decades.<sup>7-9</sup> Consequently, less radical and/or morbid treatment options, such as partial nephrectomy (PN), ablative surgery, and surveillance, have emerged in recent years (Fig. 1). With the evolving presentation, varied pathology, and better understanding of competing risks in patients diagnosed with SRMs, the optimal management approach continues to be refined. This article explores the changing trends in management of SRMs and the factors that have influenced these changes.

## TRENDS IN RADICAL NEPHRECTOMY

Radical nephrectomy (RN) has been considered the standard of care for kidney tumors for more than 50 years. RN, as originally described, resulted

Disclosure Statement: Nothing to disclose.

<sup>a</sup> Department of Urology, NYU Langone Medical Center, 150 East 32nd Street, New York, NY 10016, USA;

<sup>b</sup> Department of Urology, Perlmutter Cancer Center, NYU Langone Medical Center, 150 East 32nd Street, New York, NY 10016, USA

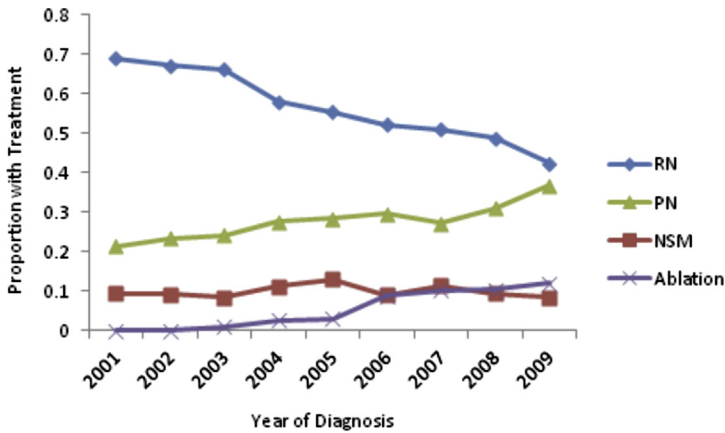
\* Corresponding author.

E-mail address: [William.huang@nyumc.org](mailto:William.huang@nyumc.org)

Urol Clin N Am ■ (2017) ■-■

<http://dx.doi.org/10.1016/j.ucl.2016.12.003>

0094-0143/17/© 2016 Elsevier Inc. All rights reserved.



**Fig. 1.** Treatment trends in small kidney cancers. NSM, non-surgical management; RN, radical nephrectomy. (Data from Huang WC, Atoria CL, Bjurlin M, et al. Management of small kidney cancers in the new millennium contemporary trends and outcomes in a population-based cohort. *JAMA Surg* 2015;150(7):664–72.)

in removal of the kidney, adrenal gland and regional lymph nodes. Because of the low likelihood of extrarenal disease in patients with localized kidney tumors, RN evolved into removal of only the affected kidney. RN, as it is known today, is performed through an open incision or through minimally invasive surgical (MIS) approaches. The use of RN for SRMs carries the advantage of maximizing oncologic outcomes and avoidance of surgery-related renal complications from nephron sparing surgery (NSS), such as urinary fistula and bleeding. The most significant drawback, however, is the detrimental impact on kidney function and the risk of chronic kidney disease (CKD) following treatment.

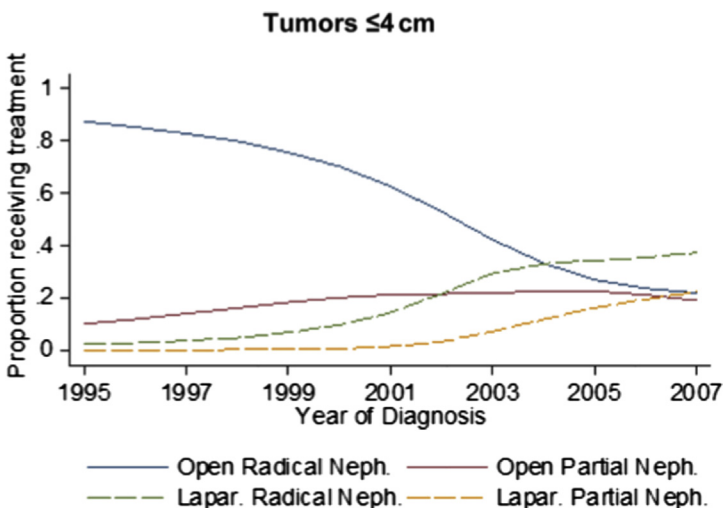
There has been a dramatic decline in RN over the past decade because of the increased use of PN and other nephron-sparing options (see Fig. 1).<sup>10</sup> The decrease is most pronounced in the use of open RN (ORN). With the introduction of laparoscopic RN (LRN) in the 1990s, it became recognized

that equivalent oncologic outcomes with improved postoperative parameters could be obtained through a minimally invasive approach, such as LRN or robotic RN.<sup>11–16</sup>

#### **Factors Influencing the Adoption of Laparoscopic Radical Nephrectomy**

Smaldone and colleagues<sup>17</sup> demonstrated adoption of MIS techniques significantly increased from 1995 to 2007 in the Surveillance, Epidemiology, and End Results (SEER) Medicare population for T1a masses resulting in a significant decrease in ORN (from nearly 90% of all kidney surgeries to ~30%) (Fig. 2). Similar trends are seen in the National Inpatient Sample (NIS) database from 2002 to 2008, where the usage of LRN doubled from 7.4% to 13.6%.<sup>18</sup>

Although the increase in the use of MIS seems to be evenly distributed across the United States, the adoption of LRN has not been uniform. Several



**Fig. 2.** Trends in utilization from 1995 to 2007 of open radical nephrectomy, laparoscopic radical nephrectomy, open partial nephrectomy, and laparoscopic partial nephrectomy for tumors  $\leq 4$  cm. (Data from Smaldone MC, Kutikov A, Egleston BL, et al. Assessing performance trends in laparoscopic nephrectomy and nephron sparing surgery for localized renal tumors. *Urology* 2012;80(2):286–92.)

Download English Version:

<https://daneshyari.com/en/article/5730599>

Download Persian Version:

<https://daneshyari.com/article/5730599>

[Daneshyari.com](https://daneshyari.com)