The evolving role of renal mass biopsy

Michael L. Blute Jr, E. Jason Abel

Department of Urology, University of Wisconsin School of Medicine and Public Health, Madison, WI, USA

Correspondence to: E. Jason Abel, MD, FACS. Assistant Professor, Department of Urology, University of Wisconsin School of Medicine and Public Health, UW Medical Foundation Centennial Building, 1685 Highland Avenue, Madison, WI 53705-2281, USA. Email: abel@urology.wisc.edu.

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Renal mass biopsy (RMB) is becoming a common method to evaluate patients with incidental renal masses (1). Richard *et al*. recently reported their experience with RMB at a single academic medical center over 13 years (2). This large series adds to the growing body of literature that provides evidence for increasing utilization of RMB. The authors report that RMB is safe, with only one major complication in 492 patients for whom data was available and no needle tract seeding was reported. These findings are consistent with a recent meta-analysis of over 5,000 patients treated with RMB, suggesting that contemporary RMB is rarely associated with serious adverse events (3).

In 529 biopsies obtained from 509 patients, Richard *et al*. reported an initial diagnostic rate of 90% and a diagnostic rate for repeat biopsies of 83%. Interestingly, this diagnostic rate is somewhat higher than previous large series which report diagnostic rates of 78–80% (4,5). In a recent publication of 565 RMB from our center, we reported a non-diagnostic rate of 15% overall and demonstrated that non-diagnostic findings were more likely for renal masses that are cystic, small, non-enhancing, or have a skin-to-tumor distance of more than 10 cm (6). Of note, Richard *et al*. excluded patients with cystic renal masses, which may increase the diagnostic rate.

While biopsy is generally reliable for determining whether cancer or benign tumors are present, the ability to identify advanced pathologic features remains limited (7). Richard *et al*. report 94% concordance between biopsy and surgical pathology with respect to nuclear grading, when lesions were considered either low grade (1 or 2) or high grade (3 or 4). However, these results are misleading because of the 100% concordance for 86 low grade tumors. Of 101 biopsies with matched surgical specimens, only 14 were high grade. Notably, biopsy correctly predicted only 8/14 (57%) high grade tumors, which is important if clinicians were to use nuclear grade to guide clinical decision making. Since high grade tumors are associated with poor outcomes, the ability to accurately identify more aggressive tumors with nuclear grade is critical if this information is used to advise patients to choose less aggressive treatments.

In conclusion, Richard *et al*. have contributed to the existing literature which demonstrates that biopsy is safe and accurate to identify malignancy in unknown renal masses. These data confirm findings from other large studies and reviews (3,6,8). Future studies should focus on what is the optimal strategy to use RMB to evaluate incidental renal masses.

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Footnote

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