continued support. We also thank Jessica L. Parker for providing guidance on conducting appropriate statistical analysis.

SUPPLEMENTARY MATERIALS

Supplementary material associated with this article can be found, in the online version, at doi:10.1016/j.urolgy.2018.03.055.

References


Editorial Comment

In this issue of Urology, Lane et al. evaluated the ability of tumor complexity scoring systems to predict postoperative renal function (PRF) following partial nephrectomy (PN). The authors found that the assessed scoring systems (RENAL, PADUA, CSA, and PAVP) had similar predictive characteristics for nadir GFR, while RENAL and PAVP scores demonstrated an association with new baseline GFR on unfavorable analyses. These findings add to our growing knowledge regarding the utility of nephrometry systems, but only paint a partial picture of the landscape of variables that determine PRF.

Evidence has long shown that performing a PN on most localized renal tumors is oncologically safe. This is reflected in recent AUA guidelines promoting the consideration of PN over radical nephrectomy (RN) for certain clinically localized tumors. However, carries unique risks, as is reflected by data from the AHRQ2; NSQIP estimates that the baseline risk for any complication of PN is 10.8% vs. 7% for a laparoscopic RN.5 To therefore justify its use, the renal functional benefit of PN must outweigh the perioperative risk; and clinicians must be able to better articulate the functional tradeoffs inherent to these decisions.

From a patient’s perspective, discussing expected post-PN renal function is an important aspect of preoperative counseling. Whereas we currently have limited tools to make such predictions,
attempts to generate predictive algorithms in this space should be encouraged for the benefit of both patients and physicians.

Nephrometry, at first glance, seems like a natural tool for predicting functional outcomes. But as the name suggests, complexity scores are only intended to communicate tumor complexity. They are powerful tools when used for tumor analysis and risk-communication; but their power to predict functional risks is only a derivate of their primary goal and does not incorporate other important variables that determine postoperative function. Alternatively, calculating parenchymal mass preservation may be a more accurate way of predicting the expected quantity of remaining kidney. However, these calculations are bulky to use at the point of care and may require significant coordination with radiology, all for minimal improvements in predictive ability. More importantly, the quantity of preserved parenchyma is not the only variable that determines postoperative function.

The goal, of course, is to give patients an upfront idea about renal functional risks. The accompanying figure illustrates a conceptual framework for discussing functional risks with patients. Postoperative renal function is determined by the combined effects of parenchymal quality, quantity, and irreversible parenchymal damage that results from surgery. Tumor complexity scores and parenchymal mass calculations can help describe some of these variables. However, none of these scores are able to incorporate all of the important variables that go into determining postoperative renal function.

We should continue to encourage efforts that improve our ability to counsel patients on oncological versus functional risks. Patients with renal tumors fear both cancer progression AND the risk of renal replacement therapy. Moreover, they ascribe different values and tradeoff preferences to each. Though complexity scores are an important tool in our armamentarium, their role in predicting composite outcomes like PRF should not be overestimated.

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Shreyas S. Joshi, M.D., Robert G. Uzzo, M.D., Department of Surgical Oncology, Division of Urologic Oncology, Fox Chase Cancer Center, Temple Health; Philadelphia, PA

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