Localized Renal Cell Cancer: A Testing Ground for New Approaches and Technology

This issue features a paper by Porter and Lange, “Controversies in the Surgical Management of Renal Cancer,” that highlights a major role for the oncology journal: examining the significant changes in treatment brought on by new technology. Taking on this task entails more than just describing the new procedure or device. To be of practical use to the clinician, the report must contain careful analysis of the multiple ramifications of introducing the new method or procedure.

Radical nephrectomy has long been considered the appropriate management for renal cell cancer. Over recent years, increased use of partial nephrectomy and the introduction of laparoscopic techniques for performing radical nephrectomy have expanded the urologic oncologist’s options. As one might suspect, the first consideration must be whether the new procedure is as good as the old in controlling the disease. In the case of the nephron-sparing procedure, observations in more than 2,600 patients indicate that for tumors less than 4 cm (and perhaps for tumors 4–7 cm), the control rates are the same as those achieved with the total organ excision. Similarly, multiple studies indicate that laparoscopic removal of the kidney achieves equivalent disease control to open approaches.

If the cancer outcome is the same, how then should use of these new procedures be determined? In this instance, secondary outcomes become important. For partial nephrectomy, major postoperative morbidity is not increased despite the longer and more complex surgical procedure.

What about the advantages? Studies suggest that overall renal function, as measured by creatinine levels, is better preserved with the lesser surgery, but data still do not show how this translates to better patient outcomes. The authors do not accept justification for partial nephrectomy based on the development of contralateral tumors, because data show this scenario to be rare. Cost analyses have not shown significant differences between the two surgical procedures. One interesting study evaluated the impact of the “amount of remaining renal tissue” on health-related quality of life and found that patients undergoing the lesser procedure had better self-reported physical health and believed that the cancer had less impact on their lives.

The secondary outcome evidence for laparoscopic nephrectomy is also revealing. In this instance, there appears to be a major advantage in the lessened morbidity, decreased complications, and shorter length of stay attendant to the new procedure. In addition to these short-term benefits, a recent study indicates that 50% of open nephrectomy patients experience long-term flank bulging with increased pain. Conversely, cost may be increased. Thus, the secondary gains for the new technology appear substantial, although at a price.

The issue then becomes partial nephrectomy or laparoscopic nephrectomy for small tumors? Technology marches on, and the next procedure on the testing pad is laparoscopic partial nephrectomy. As Porter and Lange so capably show, amassing data that look at many sides of the outcome spectrum will be necessary to arrive at final conclusions.
References


