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Role of intraoperative US in the decision for radical or partial nephrectomy

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Purpose: To investigate the effect of intraoperative ultrasonographic (US) findings on the decision for the type of nephrectomy to be performed in patients who had renal tumors that were preoperatively evaluated by using magnetic resonance (MR) imaging, with pathologic results as the reference standard.
Materials and Methods: The institutional review board approved the study protocol, and informed consent was obtained. Between June 2008 and September 2009, 44 patients (25 men, 19 women; mean age, 56.6 years; range, 28-76 years) with 46 renal tumors were prospectively assessed by using intraoperative US examinations to demonstrate tumor relationship with the nontumoral intact parenchyma. Findings at preoperative MR examinations were retrospectively evaluated by two radiologists to determine the type of surgery that would be recommended. The reference standard was results of pathologist's review of gross specimens and postoperative reports. The observers assigned their decisions as follows: score group 1, radical nephrectomy should be (should have been) performed; score group 2, partial nephrectomy can be (could have been) attempted; and score group 3, partial nephrectomy should be (should have been) performed.
Results: Radical nephrectomy was performed in 36 lesions. In all cases, the intraoperative US observer and the pathologist were concordant in the decision that radical nephrectomy versus partial nephrectomy could or should have been performed. MR observers 1 and 2 overcalled the need for radical nephrectomy in seven and four cases, respectively. Compared with pathologic results, the overall correlation of intraoperative US was 0.991, and the correlation for MR observer 1 was 0.786 and that for MR observer 2 was 0.731.
Conclusion: Intraoperative US can be suggested as a valuable examination method in patients with tumors at a central location with suspicious renal sinus extension demonstrated by using MR imaging. The close cooperation of urologist and radiologist in renal tumor work-up could reduce performance of unnecessary radical nephrectomy.

Editorial Comment

The authors review their experience in 44 patients with renal tumors and compared how recommendations obtained from different radiologist from preoperative MRI and intraoperative US studies would impact the surgeon's decision whether to perform radical or partial nephrectomy. The findings of preoperative MRI and intraoperative US were compared with pathologist's gross specimens review and post- operative reports.

Previous studies have demonstrated the utility of the association of preoperative CT studies and intraoperative US. Correlation of these methods is useful for the localization of non-palpable central tumors, particularly those with deep extension. In this original study, the authors compare the performance of preoperative MRI evaluation and intraoperative ultrasound in patients that underwent open renal surgery. As already mentioned by the authors, open surgery facilitates the use of large convex ultrasound probes, thus allowing visualization of the entire kidney and its vasculature. Smaller transducer, with smaller field of view would be necessary for example for laparoscopic nephron sparing surgery. The authors nicely show that whenever pre-operative MRI demonstrates central tumor suspicious for renal sinus fat invasion, the complimentary use of intraoperative US is very useful. In this study the diagnostic accuracy of intraoperative US and MRI for detection of tumor sinus extension, was 98% and 70%, respectively. We agree with the authors regarding their assumption that the same superiority of intraoperative US would be also observed if preoperative evaluation done with CT. Similarly to other studies the authors emphasizes that the close cooperation of urologist and radiologist is important to accomplish better surgical results, thus avoiding for example, unnecessary radical nephrectomy.

Intraoperative US for renal tumors can also be used also to identify satellite lesions, assess for peritumoral vascularity, determine renal vein invasion and also to demonstrate the cranial extension of tumor thrombus within the inferior vena cava. Radiofrequency ablation and cryoablation can also be monitored by intraoperative ultrasound.

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PATHOLOGY

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Active surveillance program for prostate cancer: an update of the Johns Hopkins experience

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Purpose: We assessed outcomes of men with prostate cancer enrolled in active surveillance.
Patients and Methods: Since 1995, a total of 769 men diagnosed with prostate cancer have been followed prospectively (median follow-up, 2.7 years; range, 0.01 to 15.0 years) on active surveillance. Enrollment criteria were for very-low-risk cancers, defined by clinical stage (T1c), prostate-specific antigen density < 0.15 ng/mL, and prostate biopsy findings (Gleason score ≤ 6, two or fewer cores with cancer, and ≤ 50% cancer involvement of any core). Curative intervention was recommended on disease reclassification on the basis of biopsy criteria. The primary outcome was survival free of intervention, and secondary outcomes were rates of disease reclassification and exit from the program. Outcomes were compared between men who did and did not meet very-low-risk criteria.
Results The median survival free of intervention was 6.5 years (range, 0.0 to 15.0 years) after diagnosis, and the proportions of men remaining free of intervention after 2, 5, and 10 years of follow-up were 81%, 59%, and 41%, respectively. Overall, 255 men (33.2%) underwent intervention at a median of 2.2 years (range, 0.6 to 10.2 years) after diagnosis; 188 men (73.7%) underwent intervention on the basis of disease reclassification on biopsy. The proportions of men who underwent curative intervention (P = 0.026) or had biopsy reclassification (P < 0.001) were significantly lower in men who met enrollment criteria than in those who did not. There were no prostate cancer deaths.
Conclusion: For carefully selected men, active surveillance with curative intent appears to be a safe alternative to immediate intervention. Limiting surveillance to very-low-risk patients may reduce the frequency of adverse outcomes.

Editorial Comment

The authors studied the outcomes of men with prostate cancer enrolled in active surveillance comparing patients who did and did not meet very-low-risk criteria. Very-low-risk was defined according to the contemporary analysis of Bastian et al. for Epstein's criteria for insignificant cancer on needle biopsy: clinical stage