KIDNEY CANCER

Limit warm ischemia to 25 min during partial nephrectomy

Warm ischemia during partial nephrectomy is associated with an increased risk of renal failure and chronic

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kidney disease, report R. Houston Thompson and colleagues in two papers published in *European Urology*. Retrospective data from Cleveland Clinic and Mayo Clinic databases were used to analyze the effects of warm ischemia in patients with a single kidney who were undergoing partial nephrectomy for renal cancer.

Outcomes of patients treated with either open or laparoscopic surgery, with or without warm ischemia, were compared. Median duration of warm ischemia was 21 min in both studies.

Warm ischemia was associated with an increased risk of acute postoperative renal failure, compared with no ischemia. Patients in the former group were also significantly more likely to develop kidney disease during follow-up.

The researchers established a cut-off of 25 min of warm ischemia as a predictor of adverse renal outcomes; each additional minute of warm ischemia was associated with an increased risk of kidney problems. “During partial nephrectomy, renal

function is best preserved if either no ischemia is used or if warm ischemia is limited to less than 20–25 min” comments Thompson. The authors concede, however, that it is not possible to completely avoid ischemia when excising the majority of kidney tumors.

Both studies excluded patients whose surgery involved cold ischemia. Nevertheless, Thompson *et al.* suggest that this technique might be an effective way of preserving function when operating on patients with only one kidney. “For most surgeons, an open approach allows for less ischemia time and ... the potential utilization of ice slush to cool the kidney during ischemia” says Thompson.

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Original articles Thompson, R. H. *et al.* Comparison of warm ischemia versus no ischemia during partial nephrectomy on a solitary kidney. *Eur. Urol.* doi:10.1016/j.eururo.2010.05.048 | Thompson, R. H. *et al.* Every minute counts when the renal hilum is clamped during partial nephrectomy. *Eur. Urol.* doi:10.1016/j.eururo.2010.05.047