

Although stone free rates were quite high in both size categories (95% versus 89%, respectively), retreatment rates were significantly higher in the larger stone group (45% versus 11%, respectively), translating into an efficiency quotient of 81 for treatment of stones  $\leq 7$  mm and 58 for stones  $> 7$  mm. Although this size cutoff was chosen randomly, it provides a reasonable algorithm to guide treatment of distal ureteral calculi when considering treatment with a third generation lithotripter. For stones  $\leq 7$  mm in size, ureteroscopy or in situ SWL are certainly reasonable treatment options. However, for stones  $> 7$  mm in size, the high success rate and low retreatment rate of ureteroscopy makes this treatment option more attractive than SWL if an HM3 is not available.

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## ENDUROLOGY & LAPAROSCOPY

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### **Current Concepts in Achieving Renal Hypothermia during Laparoscopic Partial Nephrectomy**

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**Objectives:** To review current methods of renal hypothermia during laparoscopic partial nephrectomy.

**Methods:** Review paper describing different methods of renal hypothermia during laparoscopic partial nephrectomy, including laparoscopic ice-slush, endoscopic retrograde cold saline infusion, transarterial renal hypothermia, laparoscopic cooling sheath and ancillary techniques for ischemic renoprotection.

**Conclusion:** Renal hypothermia is occasionally required during current laparoscopic renal procedures. Of the various techniques available to achieve laparoscopic renal hypothermia, the surface hypothermia achieved with ice-slush, although cumbersome, duplicates open surgical time-tested principles and is currently the preferred option. Better delivery systems for hypothermic solutions are needed for optimum uniform cooling of the kidney.

### **Editorial Comment**

This paper reviews the different methods of renal hypothermia during laparoscopic partial nephrectomy and succinctly discusses the renal physiology of hypothermia and protective mechanisms from ischemia-reperfusion

injury. Not all methods have been established yet. Recent published large series of laparoscopic partial nephrectomy from different institutions have demonstrated that renal functions, as well as, oncological outcomes are comparable to open series without the need of renal hypothermia. Although ablative and reconstructive laparoscopic surgery have been growing and developing fast, fundamental questions remain unanswered; i.e. the optimal method to prevent renal ischemia-reperfusion injury when performing laparoscopic partial nephrectomy.

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### **Comparison of Laparoscopic Partial Nephrectomy and Laparoscopic Cryoablation for Renal Hilar Tumors**

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*Urology. 2006; 67: 50-4*

**Objectives:** To compare laparoscopic partial nephrectomy (LPN) and laparoscopic cryoablation (LC) for the management of small renal tumors located near the renal hilum.

**Methods:** A retrospective chart review was performed on all patients who underwent LPN and LC. A total of 23 patients (12 LPN and 11 LC) had tumors located within 5 mm of the renal hilar vasculature. Patient data were retrospectively analyzed for specific parameters, including operative time, efficacy, morbidity, and postoperative course.

**Results:** All 23 cases were successfully completed laparoscopically. The mean operative time for LPN and LC was 2.8 hours and 2.3 hours, respectively ( $P = 0.03$ ). The mean estimated blood loss was 197 mL for LPN and 70 mL for LC ( $P < 0.01$ ). The analgesic requirement for those undergoing LPN and LC was 29 mg morphine equivalent and 23 mg morphine equivalent, respectively ( $P = 0.41$ ). The hospital stay for patients in the LPN and LC groups was 3.9 days and 3.2 days respectively ( $P = 0.55$ ). No intraoperative complications occurred in either group. Six patients experienced nine complications in the LPN group. The complications included hemorrhage in 1, fever in 1, ileus in 1, urinary tract infection in 1, urine leak in 4, and transient postoperative neuropathy in 1. The LC group had no postoperative complications. In the LC cohort, no disease recurrence developed during the 11.3 months of follow-up. No positive margins were found in the LPN cohort, and with a mean follow-up of 12 months, none have developed recurrence.

**Conclusions:** LPN for hilar tumors is a reasonable surgical option but carries an increased risk of urine leak. LC for hilar tumors has a shorter operative time and results in significantly fewer postoperative complications. Long-term follow-up data for both techniques remain unavailable.

### **Editorial Comment**

Recent data has shown that cryoablation is an emergent effective treatment technology against renal cell cancer. The authors demonstrate the application of such technology in extremely difficult cases (hilar lesions, 5 mm from the renal vessels) without the need of complex reconstructive laparoscopic steps, as in laparoscopic partial

nephrectomy. They concluded that laparoscopic cryoablation is a safe procedure that can be applied towards hilar small renal tumors with less complications compared to laparoscopic partial nephrectomy.

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## IMAGING

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### **Prediction of Organ-Confined Prostate Cancer: Incremental Value of MR Imaging and MR Spectroscopic Imaging to Staging Nomograms**

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**Purpose:** To assess retrospectively the incremental value of endorectal coil magnetic resonance (MR) imaging and combined endorectal MR imaging-MR spectroscopic imaging to the staging nomograms for predicting organ-confined prostate cancer (OCPC).

**Materials and Methods:** The institutional review board approved this HIPAA-compliant study and issued a waiver of informed consent for review of the MR reports and clinical data. Between November 1, 1999, and November 1, 2004, 229 patients underwent endorectal MR imaging and 383 underwent combined endorectal MR imaging-MR spectroscopic imaging before radical prostatectomy. Mean patient age was 58 years (range, 32-74 years). MR studies were interpreted prospectively by 12 radiologists who were informed of patients' clinical data. On the basis of the MR reports, the risks of extracapsular extension, seminal vesicle invasion, and lymph node metastasis were scored retrospectively from 1 to 5; the highest score was subtracted from 6 to determine a score (from 1 to 5) for the likelihood of OCPC on MR studies. The staging nomograms were used to calculate the likelihood of OCPC on the basis of serum prostate-specific antigen level, Gleason grade at biopsy, and clinical stage. Histopathologic findings constituted the reference standard. Logistic regression was used to estimate the multivariable relations between OCPC and MR findings. The area under the receiver operator characteristic curve was calculated for each model. The jackknife method was used for bias correction. **Results:** MR findings contributed significant incremental value ( $P \leq .02$ ) to the nomograms in the overall study population. The contribution of MR findings was significant in all risk groups but was greatest in the intermediate- and high-risk groups ( $P < .01$  for both). Accuracy in the prediction of OCPC with MR was higher when MR spectroscopic imaging was used, but the difference was not significant.

**Conclusion:** Endorectal MR imaging and combined endorectal MR imaging-MR spectroscopic imaging contribute significant incremental value to the staging nomograms in predicting OCPC.

### **Editorial Comment**

Following strict criteria of macroscopic disease, endorectal MR imaging associated with superficial phased array coil, allows an overall accuracy of 83% and specificity of 98 % for detecting extraprostatic disease. In this