

atelectasis. Preoperative antibiotics would not be anticipated to impact any of these events. The authors do not state what measures were taken to exclude other common causes of fever, tachycardia, and tachypnea during post-PCNL recuperation, such as atelectasis, hypovolemia, and pain. The Consensus panel that developed the definition of SIRS states that it is “overly sensitive and non-specific”, and caution that major surgical procedures as well as cardiogenic events may result in the clinical picture similar to SIRS(2). The consensus panel also cautions that sepsis should be defined as the presence of SIRS and infection.

### References

1. Mariappan P, Smith G, Bariol SV, Moussa SA, Tolley DA: Stone and pelvic urine culture and sensitivity are better than bladder urine as predictors of urosepsis following percutaneous nephrolithotomy: a prospective clinical study. *J Urol.* 2005; 173: 1610-4.
2. Levy MM, Fink MP, Marshall JC, Abraham E, Angus D, Cook D, Cohen J, Opal SM, Vincent JL, Ramsay G; SCCM/ESICM/ACCP/ATS/SIS: 2001 SCCM/ESICM/ACCP/ATS/SIS International Sepsis Definitions Conference. *Crit Care Med.* 2003; 31: 1250-6.

***Dr. Manoj Monga***  
*Professor, Department of Urology*  
*University of Minnesota*  
*Edina, Minnesota, USA*

## ENDUROLOGY & LAPAROSCOPY

---

### **Laparoscopic Dismembered Pyeloplasty in Children Younger Than 2 Years**

Cascio S, Tien A, Chee W, Tan HL

*Department of Pediatric Surgery, Women's and Children's Hospital, and University of Adelaide, North Adelaide, South Australia*

*J Urol.* 2007; 177: 335-8

**Purpose:** Since the first laparoscopic pyeloplasty was described in a child in 1995, there have been several reports of pyeloplasty in older children. However, to date there have been few reports of laparoscopic pyeloplasty in infants and toddlers. The aim of this study was to evaluate the results of laparoscopic pyeloplasty in children younger than 2 years.

**Materials and Methods:** All laparoscopic Anderson-Hynes pyeloplasties performed in children younger than 2 years were retrospectively reviewed. The diagnosis of ureteropelvic junction obstruction was confirmed on renal sonography and diuretic renogram. Laparoscopic pyeloplasties were performed via a transperitoneal route as originally described, with key modifications. All children were investigated with postoperative diuretic renogram and renal ultrasonography.

**Results:** A total of 38 children with ureteropelvic junction obstruction underwent laparoscopic Anderson-Hynes Pyeloplasty between January 2001 and December 2005. Of these patients 11 (7 males and 4 females) were younger than 2 years at surgery (median 1.4, range 2 to 22 months) and 1 had bilateral ureteropelvic junction obstruction, for a total of 12 primary repairs. However, 2 patients (17%) required redo laparoscopic pyeloplasty, for a total of 14 laparoscopic dismembered pyeloplasties in this age group. Operative time ranged from 70 to

140 minutes (mean 100) and median hospital stay was 2 days. Followup studies showed normal drainage in all patients except 1, who after redo pyeloplasty exhibited significantly improved but still prolonged drainage.

Conclusions: This study suggests that laparoscopic pyeloplasty can now be performed in young children with good results.

### **Editorial Comment**

Laparoscopic Pyeloplasty still remains controversial in the pediatric population. The new era of reconstructive surgery with better laparoscopic knowledge and instrumentation, i.e.; fine needlescopic (minilaparoscopic) instruments, facilitated the ease of executing a precise and delicate reconstructive surgery, allowing surgeons to perform the anastomosis without handling or traumatizing the ureter or pelvic mucosa.

In a retrospective study, the authors evaluated their experience of 14 laparoscopic dismembered pyeloplasties performed in patients less than 2 years-old. The data demonstrated feasibility of this surgical technique with a good outcome measured objectively by nuclear renal lasix scan but with no subjective evaluation (pain free postoperatively).

***Dr. Fernando J. Kim***

*Chief of Urology, Denver Health Med Ctr  
Assistant Professor, Univ Colorado Health Sci Ctr  
Denver, Colorado, USA*

### **Laparoscopic Ice Slurry Coolant for Renal Hypothermia**

Orvieto MA, Zorn KC, Lyon MB, Tohurst SR, Rapp DE, Mikhail AA, Oras JJ, Son H, Kasza KE, Brendler CB, Shalhav AL

*Section of Urology, University of Chicago, Chicago and Argonne National Laboratory, Energy Technology Division, Argonne, Illinois*

J Urol. 2007; 177: 382-5

**Purpose:** We assessed the safety and efficacy of microparticulate ice slurry for laparoscopic hypothermia during renal ischemia in a single kidney porcine model.

**Materials and Methods:** A total of 18 farm pigs were randomized to 3 groups of 6 each. All groups underwent initial right laparoscopic nephrectomy, followed by 1 of 3 procedures on the left kidney. Group 1 underwent 90 minutes hilar clamping under warm ischemia, group 2 underwent 90 minutes hilar clamping under cold ischemia using laparoscopically delivered microparticulate ice slurry and control group 3 underwent hilar dissection, no clamping and no microparticulate ice slurry. Body and renal cortical temperatures were measured. Serum creatinine and the glomerular filtration rate were assessed preoperatively, and on postoperative days 1,3,8 and 15.

**Results:** Average time to achieve a renal temperature of 20°C or less was 9.7 minutes and it remained constant during the 90 minutes cold ischemia time. Mean serum creatinine was significantly higher in the warm ischemia group than in the cold ischemia and control groups on postoperative days 1 and 3. Additionally, mean serum creatinine in the cold ischemia and control groups was similar at all time points. The mean glomerular filtration rate was significantly lower in the warm ischemia group than in the cold ischemia and control groups on postoperative days 1,3 and 8. The mean glomerular filtration rate in the cold ischemia group was lower than in the control group on postoperative day 1, while it was similar on postoperative days 3,8 and 15.

Conclusions: In the porcine model laparoscopic renal hypothermia achieved with microparticulate ice slurry was safe and efficient. It significantly decreased renal dysfunction secondary to an ischemic insult with no adverse effects or complications associated with microparticulate ice slurry use.

### Editorial Comment

Prevention of renal ischemia-reperfusion injury remains a challenge, particularly in laparoscopic partial nephrectomy. Gill et al. first reported the use of ice slush laparoscopically to achieve cold ischemia in laparoscopic partial nephrectomy, but the delivery system was somewhat cumbersome. Conversely, this animal study used microparticulate ice slurry (MPS) for laparoscopic hypothermia during renal ischemia in a single kidney porcine model. MPS contains smooth globular ice particles (< 100  $\mu$ m in diameter) suspended in saline carrier medium. MPS may be pumped through a 4 mm catheter without plugging, in contrast to the standard ice slush which is composed of dendritic ice crystals that do not flow through narrow tubes, making it not applicable for laparoscopic surgery but it is used for regional hypothermia during open procedures. Survival studies comparing 3 different groups (Group 1 - 90 minutes warm ischemia, group 2 - 90 minutes cold ischemia using laparoscopically delivered MPS, and control group 3 - hilar dissection, no clamping and no microparticulate ice slurry), demonstrated significant difference in renal function in group 1 when compared to other groups. The authors concluded that MPS was safe and efficient to achieve renal hypothermia and to decrease renal dysfunction due to ischemia-reperfusion injury.

**Dr. Fernando J. Kim**

*Chief of Urology, Denver Health Med Ctr  
Assistant Professor, Univ Colorado Health Sci Ctr  
Denver, Colorado, USA*

## IMAGING

---

### **MRI-Guided Biopsy of the Prostate Increases Diagnostic Performance in Men with Elevated or Increasing PSA Levels After Previous Negative TRUS Biopsies**

Anastasiadis AG, Lichy MP, Nagele U, Kuczyk MA, Merseburger AS, Hennenlotter J, Corvin S, Sievert KD, Claussen CD, Stenzl A, Schlemmer HP

*Department of Urology, Comprehensive Cancer Center (CCC) Tubingen, Eberhard-Karls-Universitat Tubingen, Germany*

Eur Urol. 2006; 50: 738-48

Objectives: Repeatedly negative prostate biopsies in individuals with elevated prostate specific antigen (PSA) levels can be frustrating for both the patient and the urologist. This study was performed to investigate if magnetic resonance imaging (MRI)-guided transrectal biopsy increases diagnostic performance in individuals with elevated or increasing PSA levels after previous negative conventional transrectal ultrasound (TRUS)-guided biopsies.

Methods: 27 consecutive men with a PSA > 4 ng/ml and/or suspicious finding on digital rectal examination, suspicious MRI findings, and at least one prior negative prostate biopsy were included. Median age was 66 years (mean, 64.5 +/- 6.8); median PSA was 10.2 ng/ml (mean, 11.3 +/- 5.5). MRI-guided biopsy was performed