Preoperative radiographic imaging was reviewed retrospectively to determine kidney size based on an ellipsoid shape. A visual analog pain scale with scores of 0 to 10 to assess pain related to autosomal dominant polycystic kidney disease was measured preoperatively and postoperatively.
Results: Average patient age was 48.2 years (range 30 to 64). Of the patients 14 successfully underwent bilateral hand assisted laparoscopic nephrectomy, while 4 required open conversion. A total of 16 patients underwent nephrectomy for pain and 2 underwent surgery for frequent recurrent symptomatic urinary tract infections. All patients except 1 underwent renal transplantation before bilateral nephrectomy. There was a significant difference in the volume of the right and left kidneys between the hand assisted laparoscopic and open groups (mean +/- SD 1,043 +/- 672 and 1,058 +/- 603.8 vs 4,052 +/- 548 and 3,592 +/- 1,752 cm (3), $p < 0.001$ and 0.06 respectively). There were 5 complications, including wound infection and protracted ileus in 2 patients each, and incisional hernia in 1. In addition, the difference in mean preoperative and postoperative visual analog pain scores was statistically significant (6.9, range 3 to 10 and 0.5, range 0 to 2, $p < 0.05$).
Conclusions: Bilateral laparoscopic hand assisted nephrectomy is a safe and reliable option in patients requiring removal of the 2 kidneys in a single setting. Rather than performing staged nephrectomies, hand assisted laparoscopic nephrectomy allows the single administration of general anesthesia and provides effective relief of bothersome symptoms in patients with symptomatic autosomal dominant polycystic kidney disease. This procedure is safe in patients with renal transplants. Patients with massive polycystic kidneys with a kidney volume of greater than 3,500 cc are at increased risk for open conversion and they may have improved outcomes if open nephrectomy is attempted from the outset.

Editorial Comment
The new era of minimally invasive surgery demonstrates the feasibility of bilateral nephrectomies performed laparoscopically. There are no more questions that patients recover faster with better outcomes than the open counterpart is. Moreover, this less invasive approach allows patients to undergo 2 procedures in one setting providing innumerous benefits to patients that in the past had to experience staged operations. The authors demonstrated limitations to the technique when the polycystic kidneys are massively large decreasing the working space.

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IMAGING

Conscious Sedation Reduces Distress in Children Undergoing Voiding Cystourethrography and Does Not Interfere With the Diagnosis of Vesicoureteric Reflux: A Randomized Controlled Study

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Objective: Voiding cystourethrography (VCU) is a distressing procedure for children. Conscious sedation using oral midazolam may reduce this distress, but its use may also alter the ability of the VCU to show vesicoureteric reflux (VUR). The objectives of our study were to assess the effectiveness of conscious sedation using oral midazolam when administered routinely in children undergoing VCU and to ensure that conscious sedation using oral midazolam does not alter the ability of VCU to show VUR.

Subjects and Methods: Our study was a randomized double-blind controlled trial performed at a university teaching hospital; our study group consisted of children over the age of 1 year who been referred for their first VCU examination from July 2001 to July 2003. Participants were randomized to receive a placebo or midazolam syrup (0.5 mg/kg) before the examination. The primary outcome measures were the Groningen Distress Rating Scale (GDRS) and grading of VUR, as defined by the international grading system established by the International Reflux Study Group.
Results: There were no serious adverse events. One hundred thirty-nine children were randomized in the study, and 117 underwent complete assessment. Eight who underwent VCU after the study day were included in a "complete case" intention-to-treat analysis. In the placebo group, 34 children (61%) experienced serious distress or severe distress (GDRS score, 3 or 4). In the midazolam group, 16 children (26%) experienced the same degree of distress. There was a significant difference between the GDRS scores (nonlinear mixed-model analysis, $p < 0.001$) of the two study groups. The number needed to treat to reduce serious or severe distress in one child was 2.9 (95% CI, 1.9-5.5). VUR was identified in 16% of all children. There was no difference in VUR grading between the groups (nonlinear mixed-model analysis, $p = 0.31$).
Conclusion: Routine use of oral midazolam (0.5 mg/kg) for conscious sedation of children undergoing VCU reduces distress and does not alter the ability of VCU to show VUR well enough to allow diagnosis.

Editorial Comment

In children, the voiding cystourethrogram (VCUG) although a stressful experience for patients and their parents, is an exam relatively easy to perform by an experienced radiologist. Usually no preparation is needed for children; no cleansing enema, fasting or anesthesia is required. In fact, up to now, the vast majority of radiologists prefers to perform this examination when the child is awake. In selected group of children, particularly those who are excessively frightened (previous VCUG), oral midazolam has been used sporadically in order to reduce anxiety and produce antegrade amnesia (1). In 2003, a randomized double blind study (oral midazolam and placebo) performed in 95 children showed that there was no difference in frequency or grade of vesicoureteric reflux or bladder emptying between the two groups of patients(2). We must emphasize that good results has been obtained only with oral midazolan and not with other drugs. Recent study showed that children who underwent VCUG with sedation using propofol were less likely to void to completion thus impairing the ability to accurately detect vesicoureteral reflux (3).

The authors of this important study clearly shows that sedation with midazolam facilitates the performance of VCUG in children above 1 year of age, with no impairment in the capacity of detect vesicoureteric reflux. We believe that sedation with oral midazolam should be routinely used in children candidate for VCUG examination since it reduce the stress and has no negative effect on the outcome of the examination.

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Surgically Relevant Normal and Variant Renal Parenchymal and Vascular Anatomy In Preoperative 16-MDCT Evaluation of Potential Laparoscopic Renal Donors

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Objective: Using 16-MDCT, we describe and quantify the frequency and types of renal anatomic variants and findings relevant for preoperative evaluation and surgical planning for potential laparoscopic renal donors.
Materials and Methods: On 16-MDCT, 126 consecutive potential donors underwent scanning before contrast administration and after i.v. power injection of nonionic contrast material during the arterial, nephrographic, and excretory phases. On a 3D workstation, CT images were evaluated retrospectively in consensus by three abdominal imagers. The number and branching pattern of bilateral renal arteries and veins, including anomalies of the inferior vena cava and lumbar-gonadal axis, were categorized along with the frequency of incidental findings of the renal parenchyma and collecting system.
Results: Major arterial variants including supernumerary and early branching arteries were present in 16% and 21%, respectively, of left kidneys and 22% and 15%, respectively, of right kidneys. Major and minor venous variants were detected in 11% and 58% of left kidneys and 24% and 3% of right kidneys. Late confluence of the venous trunk was identified in 17% of left kidneys and 10% of right kidneys. Incidental parenchymal and urothelial abnormalities, most commonly cysts and calyceal calcifications, were identified in 30% of the kidneys. Other relevant incidental findings included focal infarcts, cortical scars, atrophic scarred kidney, and bilateral papillary necrosis. Urothelial variants included bilateral simple ureteroceles and rightsided complete duplicated collecting system.
Conclusion: 16-MDCT angiography and urography allow confident detection and classification of a variety of anatomic and incidental anomalies relevant to the preoperative selection of potential laparoscopic renal donors and to surgical planning.

Editorial Comment

In most transplantation centers, multi–detector row computed tomography (MDCT), is used as the sole imaging technique in the preoperative evaluation of living renal donors. With 16-row-MDCT an increased number of simultaneously acquired slices and sub-millimeter collimation allows a near isotropic scanning with high spatial resolution thus providing exquisite multiplanar reconstructions of the kidneys and the vascular anatomy.

The authors nicely show the value of 16-row-MDCT for the preoperative knowledge of renal vascular, parenchymal and urothelial anatomy and their importance for donor and kidney selection. 16-row-MDCT angiography and urography, enabled excellent preoperative information, which are essential since it helps laparoscopic surgeons to anticipate variant anatomy intraoperatively and avoid potential donor complications.

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