gynecologist with no intraoperative injury to the ureter. The patients were followed by radiographic imaging using intravenous urography preoperatively then again at 2 and 4 weeks postoperatively. Findings included the presence of hydronephrosis in 10 renal units out of the 34 patients who were included in the study. There was no serial increase in any noted hydronephrosis at the 3 month postoperative check-up and there was radiographic resolution all affected kidneys by 6 months. The value of this study lies in its assisting the urologist in understanding the natural history of incidental hydronephrosis after hysterectomy. Many times the consulting urologist noting this radiographic finding must make the diagnostic and clinical decision to perform ureteric stenting versus percutaneous nephrostomy tube or allow for watchful waiting. This study emboldens those urologists who wish to follow an asymptomatic patient conservatively. The authors should be commended on their study. The paper's value may have been potentially increased if a comment could have been made on whether the patients had undergone cystourethroscopy after intravenous indigo carmine injection during the operation (1) to delineate ureteral patency; in addition, a description of the postoperative urinalysis and serum creatinine in all patients postoperatively with special emphasis on the patients with abnormal radiographic findings and a brief commentary on the patient's symptoms and clinical examination would have been enlightening. One wonders based on this study, what the rate of incidental and clinically significant post operative hydronephrosis would be in patients with patent ureters checked intraoperatively with intravenous indigo carmine.

**Reference**

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## PEDIATRIC UROLOGY

### One hundred percent patient and kidney allograft survival with simultaneous liver and kidney transplantation in infants with primary hyperoxaluria: a single-center experience

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Background: Combined liver-kidney transplantation is the definitive treatment for end-stage renal disease caused by primary hyperoxaluria type I (PH1). The infantile form is characterized by renal failure early in life, advanced systemic oxalosis, and a formidable mortality rate. Although others have reported on overall results of transplantation for PH1 covering a wide age spectrum, none has specifically addressed the high-risk infantile form of the disease.

Methods: Six infants with PH1 underwent simultaneous liver-kidney transplantation at our center between May 1994 and August 1998. Diagnosis was made at 5.2 +/- 3.3 months of age, they were on dialysis for 11.8 +/- 2.3 months, and they underwent transplantation at 14.8 +/- 3.0 months of age when they weighed 10.6 +/- 1.7 kg.

Results: At a mean follow-up of 6.4 +/- 1.7 years (range, 3.9 - 8.1 years), we report 100% patient and kidney allograft survival. There were no cases of acute tubular necrosis. Long-term kidney allograft function remained stable in all patients, with serum creatinine values of less than 1.1 mg/dL and a mean creatinine clearance of 99 mL/min/1.73 m2 at follow-up. Those who received combined hemodialysis and peritoneal

dialysis pretransplant had lower posttransplant urinary oxalate values than those receiving peritoneal dialysis alone. There was improvement in growth and psychomotor and mental developmental scores after transplantation.

Conclusions: Combined liver-kidney transplantation for the infantile presentation of PH1 is associated with excellent outcome when the approach includes early diagnosis and early combined transplantation, aggressive pretransplant dialysis, and avoidance of posttransplant renal dysfunction.

**Editorial Comment**

The authors report their experience with a rare but physiologically important disease. Primary hyperoxaluria is a severe, life-threatening disease that results in systemic oxalosis and early renal failure. Treatment of the neonatal renal failure has involved various regimens of "hyperdialysis" along with renal transplantation, as the total body oxalate stores are so high that immediately after successful renal transplantation, severe hyperoxaluria results. Because the enzyme deficiency responsible for the condition is in the liver primarily, renal transplantation alone does not solve the basic problem long-term. Hence, some have advocated combined liver and kidney transplantation, that, when combined with a regimen of "hyperdialysis" preoperatively should be curative.

The authors present their experience with 6 cases in which the infants underwent liver-kidney transplant at a mean age of 15 months. All patients have survived with good renal function at a mean follow-up of 6.4 years. Though this approach is still experimental, the authors demonstrate a remarkable result in children who otherwise would have an extremely high mortality.

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**Long-term outcome of laparoscopically managed nonpalpable testes**

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Purpose: We evaluated laparoscopic diagnostic findings in 108 impalpable testes, and analyzed the success rate and long-term outcome of either direct laparoscopic orchiopexy or the 2-stage Fowler-Stephens procedure.

Materials and Methods: A total of 84 children with 108 impalpable testes and a mean age of 1.9 years underwent laparoscopy between 1992 and September 2000. Long-term outcome with regard to viability and location of the testes was evaluated. Results: Of the 108 testes 72 were located intra-abdominally, of which 28 were managed by direct laparoscopic orchiopexy, 29 were managed by a 2-stage laparoscopic Fowler-Stephens procedure and 15 were vanishing. The remaining 36 testes were inguinally located during exploration and orchiopexy, except for 5 vanishing testes. In all cases the operation proceeded as planned. After a mean followup of 6.2 years all laparoscopically managed testicles were in a normal scrotal position with normal perfusion as revealed by color flow Doppler sonography. Two testicles became atrophic after a 2-stage Fowler-Stephens procedure. Morbidity was low in all children. Conclusions: The laparoscopic approach allows not only diagnosis, but also adequate therapy regardless of whether direct orchiopexy or a 2-stage procedure is performed. Our long-term results clearly demonstrate that even in the patients undergoing the 2-stage procedure the laparoscopic approach is safe and efficient, and leads to excellent results concerning viability of the affected

testicles. Progress and experience gained during recent years are encouraging in continuing laparoscopic procedures in children.

**Editorial Comment**

The management of nonpalpable testes has changed dramatically in the past 10 years. Currently in most centers, diagnostic laparoscopy is the procedure of choice. This has been demonstrated clearly to be the procedure of choice for localization of high testes. In some cases, the diagnosis of "vanishing" testes can be made and this is sufficient to avoid further operative intervention. In others the visualization of the exact position of the testis will determine the operative plan. In some cases an inguinal approach is sufficient, but in others an abdominal approach is needed. Based on advances in laparoscopic techniques, most intraabdominal testes can be brought down with using laparoscopic dissection, as either a single- or a two-staged procedure. However the literature is short on long-term results of these procedures.

The authors report their experience with laparoscopic management of 84 children with 108 nonpalpable testes. Ultimately 28 underwent a single-stage laparoscopic orchiopexy and 29 underwent a 2-stage laparoscopic Fowler-Stephens type of orchiopexy. The results at a mean follow-up of 6.2 years are reported. Of the children who underwent the single-stage procedures, all had testes in a normal scrotal position with normal perfusion by Doppler ultrasound. Of those undergoing the two-stage procedure, two had atrophic testes. Although these results are less good, these procedures were, of course, done in a more difficult population with testes that were no doubt higher than the others were. Overall the surgical results are excellent and they were achieved with a minimum of morbidity.

On the other hand, it must be said that the authors use "long-term" loosely. For example, what will the adult testicular size be? Will the epididymis in these patients allow normal sperm development and transport? Will the vas function normally? What will the sperm counts/fertility be? What will the incidence of neoplasia be? What we need in pediatric urology are data that are truly "long-term".

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