

were able to achieve a self reported dry rate in 68% of their patients with a mean follow-up of 72 months. No patient felt that the procedure made them worse.

When reading this article, many will remember the previous anti-incontinence device termed genitourinary spheroidal membranes which were placed approximately 20 years ago (1). The advantage of this contemporary device is the potential for less migration and the ability to postoperatively titrate. In the past, the genitourinary spheroidal membrane effect could be enhanced by placing more membranes spheres paraurethraly; consequently, on occasion there was some dislodgement with proximal migration of the device(s) into the retropubic space. This adjustable continence device is placed and first allowed to form a pseudo capsule prior to beginning the process of balloon adjustment to address the incontinence. This method seems to have limited the complication of dislodgement and optimized the results in this challenging population of patients with very low Valsalva leak point pressures (< 60 cm water). The device certainly looks appealing and very competitive with injectable therapy but only time will provide the answer whether it will achieve a high level of popularity.

### Reference

1. Darson MF, Malizia AA, Barrett DM: Periurethral injection of the genitourinary spheroidal membrane. *J Endourol.* 1996; 10: 283-6.

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## PEDIATRIC UROLOGY

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### Value of ultrasound in evaluation of infants with first urinary tract infection

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**Purpose:** We evaluated the role of ultrasound in diagnosing and treating infants with a first urinary tract infection with a focus on important structural abnormalities.

**Materials and Methods:** In a setting of limited prenatal ultrasound screening this population based, prospective, 3-year study included 161 male and 129 female infants. Ultrasound and dimercapto-succinic acid scintigraphy were performed as initial investigations and voiding cystourethrography was conducted within 2 months.

**Results:** Ultrasound revealed dilatation in 15% of patients and increased kidney length in 28%. Sensitivity for detecting scintigraphic abnormality was 48%. Renal length was significantly correlated to inflammatory parameters, including scintigraphic abnormalities. Important structural abnormalities were detected in 40 cases, with 30 on ultrasound, while 10 of 27 cases of dilating reflux (mostly grade III) were missed. Outside the study there were 28 additional cases of structural abnormality, of which 15 were detected prenatally.

**Conclusions:** Ultrasound detected most structural abnormalities except grade III reflux. Since it is noninvasive, ultrasound has a place in the evaluation of infants with urinary tract infection, especially in the absence of prenatal

ultrasound during late pregnancy. Kidney length in infants with acute infection correlated with inflammatory parameters, and the clinical importance of this finding needs to be studied further.

### Editorial Comment

This is a population-based, prospective study looking at all patients younger than one year of age who presented with a urinary tract infection to a single institution over 3 years. They were able to get complete data on 290 patients, all of whom underwent DMSA scan and ultrasonography acutely and then a VCUG within two months of diagnosis. Structural abnormalities were detected in 40 patients. Ultrasound was able to detect abnormalities in all but 10 of these patients. These 10 patients had “dilating” vesicoureteral reflux. 12 of the 40 patients went on to require surgery, but only 6 of those procedures were for reflux. Other important abnormalities detected included UPJ obstruction, UVJ obstruction and ureterocele.

As we continue to evaluate the pros and cons of a top down versus bottom up approach to reflux, this study highlights the continued value of ultrasonography for pediatric patients. Some have questioned the usefulness of ultrasonography for evaluation of children with a urinary tract infection. The fact that ultrasonography is readily available, non-invasive, and does not require radiation exposure will likely ensure that this imaging modality will not be left to the wayside regardless of which approach one chooses.

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### Management of abnormal postvoid residual urine in children with dysfunctional voiding

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**Objectives:** To evaluate the effect of biofeedback therapy on the residual urine volume in children with dysfunctional voiding.

**Methods:** This prospective study was conducted in children with dysfunctional voiding associated with abnormal postvoid residual urine (PVR) from June 2002 to 2007. The children were divided randomly into 2 groups. Group 1 was treated with standard urotherapy combined with biofeedback therapy and group 2 was treated with only standard urotherapy. The outcomes of uroflow-electromyography pattern, urinary tract infection (UTI), and PVR were recorded before and at the end of sixth month of treatment.

**Results:** A total of 94 patients were enrolled in this study. Groups 1 and 2 consisted of 62 and 32 patients, respectively. The voiding pattern became normal in 80.6% (50/62) and 56.2% (18/32) of patients in groups 1 and 2, respectively. The PVR resolved in 40 of 62 (64.5%) patients in group 1 and in 11 of 32 (34.4%) children in group 2. Before the treatment, UTI was noted in 22.5% of patients (14/62) in group 1 and 21.8% of patients (7/32) in group 2. After the treatment, UTI was observed in 3.2% of patients (2/62) and in 9.3% (3/32) of patients in groups 1 and 2, respectively. Although both treatment modalities changed the voiding pattern, rate of febrile UTI, and PVR positively, these outcomes were better in a combination group.

**Conclusions:** The combination of standard urotherapy with the biofeedback therapy improved the results significantly.