

## NEUROUROLOGY & FEMALE UROLOGY

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### **Is There A Role For Periurethral Collagen Injection In The Management Of Urodynamically Proven Mixed Urinary Incontinence?**

Poon CI, Zimmern PE

*Department of Urology, University of Texas Southwestern Medical Center, Dallas, Texas, USA*

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**Objectives:** To investigate the effectiveness of periurethral collagen injection (PCI) in patients presenting with symptoms of mixed urinary incontinence (MUI) and urodynamically demonstrated sphincter deficiency and detrusor overactivity.

**Methods:** A retrospective review was performed on all patients undergoing PCI from February 1999 to February 2003, during which those with MUI were treated with PCI as first-line therapy. The inclusion criteria were MUI symptoms, detrusor overactivity on urodynamic study, stress urinary incontinence due to sphincter deficiency (determined from physical examination, stress test, urodynamic study with Valsalva leak point pressure, and cystography findings, without urethral hypermobility). The primary outcome measures were the Urogenital Distress Inventory (UDI), Incontinence Impact Questionnaire, and quality-of-life score and the need for anticholinergic medications or additional surgery. Comparisons were performed using the Wilcoxon signed ranks test and paired t test.

**Results:** Of the 56 patients who underwent PCI, 43 presented with symptoms of MUI, and 16 of these (29%) had both detrusor overactivity and stress urinary incontinence on urodynamic study. The mean follow-up after PCI (without additional PCI) was 18 months (range 6 to 39). The mean age was 65 years (range 40 to 84). The mean Valsalva leak point pressure was 54 +/- 40 cm H<sub>2</sub>O (range 18 to 146). Ten patients had undergone previous anti-incontinence procedures, and anticholinergic medications had failed in six. The questionnaire scores, indicating severe MUI/poor quality of life before PCI, improved after PCI: UDI question 1, 2.3 +/- 0.8 versus 1.3 +/- 1.0 (P = 0.021); UDI question 2, 2.1 +/- 1.2 versus 1.4 +/- 1.0 (P = 0.068); UDI question 3, 2.9 +/- 0.4 versus 1.8 +/- 1.2 (P = 0.010); and quality-of-life question, 8.6 +/- 2.1 versus 5.2 +/- 3.5 (P = 0.026). The mean injected volume/patient was 8.5 cm<sup>3</sup> (range 5 to 17) within a mean of 1.9 treatments (range 1 to 3). Four patients continued taking anticholinergic medications and one proceeded to sling placement.

**Conclusions:** The use of PCI as the primary/initial intervention in patients with MUI may be the preferred approach, particularly in patients with an elevated risk of anticholinergic medication side effects or when voiding dynamics preclude sling placement.

#### **Editorial Comment**

The authors describe a retrospective review involving the performance of periurethral collagen injection for patients plagued with mixed urinary incontinence. The detrusor overactivity was diagnosed on urodynamics as an increase in detrusor pressure and/or a sensation of urgency with or without incontinence during the filling phase of the study.

The authors found a significant improvement in both the symptoms of stress urinary incontinence and overactive bladder (urinary frequency and urinary urge incontinence). These findings somewhat echo those found by McGuire & Savastano (1) from greater than 2 decades ago. This mirror success rate does give some merit to the argument of detrusor overactivity having a definite urethral component in its etiology. Based on the findings of these authors, injectable therapy seems to be a very reasonable option for patients with mixed urinary urge incontinence and has a higher success than those patients tried with pharmacologic therapy alone.

## Reference

1. McGuire EJ, Savastano JA: Stress incontinence and detrusor instability/urge incontinence. *Neurourol. Urodyn.* 1985; 4: 313-6.

**Dr. Steven P. Petrou**

*Associate Professor of Urology*

*Chief of Surgery, St. Luke's Hospital*

*Associate Dean, Mayo School of Graduate Medical Education*

*Jacksonville, Florida, USA*

## Treatment for Unsuccessful Tension-Free Vaginal Tape Operation by Shortening Pre-Implanted Tape

Lo TS, Wang AC, Liang CC, Long CY, Lee SJ

*Division of Urogynecology, Department of Obstetrics and Gynecology, Chang Gung Memorial Hospital, Linkou Medical Center, Taiwan, Republic of China*

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**Purpose:** We studied the efficacy of shortening the pre-implanted suburethral tape in patients with recurrent urodynamic stress incontinence after a TVT operation.

**Materials And Methods:** A total of 14 women, including 6 with ISD, were treated for recurrent urodynamic stress incontinence after the initial TVT operation by performing the shortening procedure under local anesthesia. Urodynamics, a 1-hour pad test, introital ultrasonography of the urethra and a cotton swab test were done before the procedure and 1 year postoperatively.

**Results:** All 14 patients completed the shortening procedure. Mean patient age was 47.2 years (range 43 to 66). Mean time between initial TVT and the shortening procedure was 4 months (range 3 to 14). Ten patients (71.4%) were objectively cured and treatment failed in 4 (2 with ISD and 2 with a fixed urethra). Mean operative time was 17 minutes (range 10 to 25). No intraoperative surgical complications were observed. The 1-hour pad test showed a decrease from a median of 9.0 gm to 1.0. Median postoperative hospital stay was 1 day (range 1 to 4). Spontaneous voiding with adequate post-void residual urine was noted in all patients before discharge home.

**Conclusions:** Shortening a pre-implanted TVT tape for the treatment of recurrent urodynamic stress incontinence is a safe, effective and minimally invasive option requiring only a short hospital stay. However, ISD and an immobile urethra seem to be risk factors for failure. Long-term followup is needed to determine if this surgery achieves long-lasting results.

## Editorial Comment

The authors describe a method to address recurrent urinary incontinence after failed TVT by transvaginal plication of the in situ TVT tape. The authors managed to objectively cure 10 out of the 14 patients (71.4%) with this maneuver while 4 continued with recurrent stress incontinence.

Addressing of recurrent urinary incontinence after TVT has been a topic of discussion in the literature. The above method as described appears to be quite technically facile with a very reasonable salvage success rate. The authors, while performing the transvaginal procedure, did not have any difficulty in locating the in situ sling. Secondary to the actual nature of the TVT procedure, the in place tightening of sutures cannot be performed as described by Choe (1). Repeat transvaginal tape (2) may be considered but carries with it the duplicate expense for the repeat tape. Though multiple options exist for the failed TVT (including repeat TVT

procedure, suburethral sling using an alternative material, versus injectable) this procedure appears to be inexpensive, straight forward, with an acceptable level of success.

#### References

1. Choe JM: Suprapubic sling adjustment: minimally invasive method of curing recurrent stress incontinence after sling surgery. *J Urol.* 2002; 168: 2059-62.
2. Riachi L, Kohli N, Miklos J: Repeat tension-free transvaginal tape (TVT) sling for the treatment of recurrent stress urinary incontinence. *Int Urogynecol J Pelvic Floor Dysfunct.* 2002;13: 133-5; discussion 135.

**Dr. Steven P. Petrou**

*Associate Professor of Urology*

*Chief of Surgery, St. Luke's Hospital*

*Associate Dean, Mayo School of Graduate Medical Education*

*Jacksonville, Florida, USA*

## PEDIATRIC UROLOGY

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### **Prediction of Vesicoureteral Reflux after a First Febrile Urinary Tract Infection in Children: Validation of a Clinical Decision Rule**

Leroy S, Marc E, Adamsbaum C, Gendrel D, Breart G, Chalumeau M

*Clinical Epidemiology Unit, Department of Paediatrics, Saint-Vincent-de-Paul Hospital, AP-HP, Universite Paris V, Paris, France*

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**Aims:** To test the reproducibility of a highly sensitive clinical decision rule proposed to predict vesicoureteral reflux (VUR) after a first febrile urinary tract infection in children. This rule combines clinical (family history of uropathology, male gender, young age), biological (raised C reactive protein), and radiological (urinary tract dilation on renal ultrasound) predictors in a score, and provides 100% sensitivity.

**Methods:** A retrospective hospital based cohort study included all children, 1 month to 4 years old, with a first febrile urinary tract infection. The sensitivities and specificities of the rule at the two previously proposed score thresholds ( $\leq 0$  and  $\leq 5$ ) to predict respectively, all-grade or grade  $\geq 3$  VUR, were calculated.

**Results:** A total of 149 children were included. VUR prevalence was 25%. The rule yielded 100% sensitivity and 3% specificity for all-grade VUR, and 93% sensitivity and 13% specificity for grade  $\geq 3$  VUR. Some methodological weaknesses explain this lack of reproducibility.

**Conclusions:** The reproducibility of the previously proposed decision rule was poor and its potential contribution to clinical management of children with febrile urinary tract infection seems to be modest.

#### **Editorial Comment**

The authors attempt to validate a previously proposed decision-rule that can be used to decide when to obtain a VCUG in children who have had a first febrile UTI. This is potentially valuable, as any method of limiting the number of catheterized studies in young children would be beneficial. The proposed decision-rule takes into account the age, gender, family history, C-reactive protein and dilation noted on ultrasound. These are all clinically relevant features of the child presenting with a febrile UTI.