

## FEMALE UROLOGY

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### **Urodynamically defined stress urinary incontinence and bladder outlet obstruction coexist in women**

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**Purpose:** The definition and significance of female bladder outlet obstruction (BOO) are poorly understood. We identified patients with urodynamic evidence of BOO in a cohort of women with stress urinary incontinence (SUI).

**Materials and Methods:** Women with SUI were identified from a videourodynamic data base and pressure flow studies were reexamined. Subjects were excluded if detrusor pressures could not be measured. BOO was diagnosed if the maximum flow rate was less than 12 ml per second and detrusor pressure at maximum flow was greater than 20 cm water or maximum detrusor pressure was greater than 20 cm water in those without measurable flow. Clinical and urodynamic characteristics were compared in the obstructed and unobstructed groups.

**Results:** Of 104 eligible subjects 19 (18.3%) had BOO. Maximum flow rate, mean flow rate and voided volume were significantly less in the BOO group than in the unobstructed group (8.7 vs. 13.5 ml per second,  $p = 0.004$ , 5.9 vs. 7.9 ml per second,  $p = 0.001$  and 180 vs. 272 ml,  $p = 0.008$ ). Detrusor pressure at maximum flow, maximum detrusor pressure and post-void residual volume were significantly greater in the BOO group than in the unobstructed group (28 vs. 15 cm water,  $p < 0.0001$ , 31 vs. 19 cm water,  $p < 0.0001$  and 71 vs. 10 ml,  $p = 0.008$ ). Etiologies of BOO identified in the 19 subjects included prior anti-incontinence or prolapse surgery in 6, neurological conditions in 4, cystocele in 2, dysfunctional voiding in 3 and idiopathic in 5.

**Conclusions:** SUI and BOO can coexist even in the absence of common causes of obstruction.

### **Editorial Comment**

The authors of this study reviewed their video urodynamic database and analyzed women with stress urinary incontinence (SUI) to identify evidence of bladder outlet obstruction. It was found that of 104 female patients with urodynamic stress urinary incontinence (defined as involuntary leakage from the urethra during increased abdominal pressure in the absence of a detrusor contraction), 19 (18.3%) had bladder outlet obstruction (BOO). Bladder outlet obstruction was diagnosed if there was a maximum flow rate of  $< 12$  cc/sec and a detrusor pressure at maximum flow of  $> 20$  cm, or if no measurable flow was identified that there was a sustained detrusor contraction during the attempt to void of  $> 20$  cm of water. Potential etiologies of bladder outlet obstruction were identified in 14 of the 19 patients including prior surgery, neurological disorder, cystocele, and dysfunctional voiding. Idiopathic etiology was noted in 5 of the 19 patients.

This paper carries a true intrinsic value through its demonstration that stress urinary incontinence and bladder outlet obstruction may synchronously coexist. Critical points of this study do include the notation that patients were standing during the voiding portion of the urodynamic study as opposed to the standard female micturitional sitting position. The effect of this different position on gender specific voiding is unclear. In addition, the pressure flow analysis was completed with a catheter in the bladder as opposed to a catheter free uroflow. Groutz et al. (1) have previously discussed the potential effect of a transurethral catheter on maximum flow rates in obstructed females. One may postulate that perhaps if the patients in this data base had a catheter free uroflow they would not have qualified as obstructed in this study.

The authors highlight the expanding interest in the identification and analysis of bladder outlet obstruction in women. This will especially have great value for the surgeons who must re-operate on patients who have failed a previous anti-incontinence operation and ponder the need to include a formal urethrolisis at the re-operative setting.

### Reference

1. Groutz A, Blaivas JG, Sassone AM: Detrusor pressure uroflowmetry studies in women: effect of a 7Fr transurethral catheter. *J Urol.* 2000; 164: 109-14.

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### **Nutrient composition of the diet and the development of overactive bladder: a longitudinal study in women**

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**Aims:** Evidence for an association between diet and the symptom syndrome overactive bladder (OAB) would be valuable in understanding its aetiology. The present study investigates prospectively the association between the nutrient composition of the diet and the onset of OAB.

**Methods:** A random sample of community dwelling women aged 40 years or over was studied. Baseline data on urinary symptoms and diet were collected from 6,371 women using a postal questionnaire and food frequency questionnaire. Follow-up data on urinary symptoms were collected from 5,816 of the women in a postal survey 1 year later. Logistic regression was used to investigate the association of diet (daily intakes of energy, macro and micronutrients) with 1 year incidence of OAB.

**Results:** There was evidence that three nutrients may be associated with OAB onset. Higher intakes of vitamin D ( $P = 0.008$ ), protein ( $P = 0.03$ ), and potassium ( $P = 0.05$ ) were significantly associated with decreased risks of onset. Although overall the associations with vitamin B6 and niacin were not significant ( $P = 0.08$  and  $P = 0.13$ ), there was some evidence of a decreased risk of onset with higher intakes.

**Conclusions:** The results from this prospective study suggest possible aetiological associations between certain nutrients and OAB onset. The findings need confirmation and possible mechanisms to explain these associations need further investigation.

### **Editorial Comment**

This is a very interesting paper, which expands on the earlier work of these authors regarding dietary associations with overactive bladder (OAB). Their past work noted that lower intakes of either vegetables, chicken or breads were independently associated with increased risks of OAB. In this publication, the authors investigated the association between the onset of symptoms of the OAB and routine dietary composition of a specific population with specific regard to both vitamins and macronutrients. The population examined was analyzed using a validated food frequency questionnaire for population in the United Kingdom. Demographic similarity was pursued by relying on census data (those patients who were from South Asian origin were excluded). The data was accumulated through a food frequency postal questionnaire (FFQ) that had been validated for use in a population of the United Kingdom. Statistical analysis was completed to examine the nutrient intakes of patients who had the onset of new OAB cases after 1 year and compare it to those who did not have the symptom complex both at the baseline and follow-up questionnaire. Each nutrient was analyzed with adjustments made for energy intake, age and the presence of stress urinary incontinence. The authors

found that there was a definite possible ideological association between the onset of overactive bladder and nutrient composition of the diet. Specifically, they found that higher intakes of potassium, protein, and vitamin E were significantly associated with a decreased risk of onset of OAB. In addition, vitamin B6, niacin and retinol intake had an association that was approaching but not quite establishing statistical significance.

With the aging population and the increased incidence of overactive bladder, research such as this is extremely valuable for its potentially cost effective prophylaxis against the onset of this malady. The value of vitamin D and its association with exposure to light gives a measure of scientific support to the common feeling that fresh air and sunlight does have the potential to be restorative to good health. Though the questionnaire was validated to a certain population it would be of genuine interest to have similar questionnaire addressed to other populations which show a strong degree of genetic similarity whether it be in Europe, Asia or Africa. With patients continually pressing physicians for a holistic pathway to retain good health and stave off the common maladies associated with aging, this paper makes for valuable reading to give advice on same.

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## **PEDIATRIC UROLOGY**

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### **Late renal functional and morphological evaluation after non-operative treatment of high-grade renal injuries in children**

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**Objective:** To assess the long-term results in children with high-grade renal trauma who were managed without surgery, as such treatment was initially successful but little is known about the late ipsilateral renal function and morphology.

**Patients and Methods:** The study included 13 children (nine boys and four girls; mean age 8 years, sd 5) with high-grade renal injury who were managed without surgery between 1997 and 2001, and followed for a mean (sd, range) of 3 (2, 0.5-7) years. The trauma was caused by a motor-car accident in five and falling from a height in eight children, and was on the right in 10 and on the left in three. There was gross and microscopic haematuria in 10 and three patients, respectively. The trauma was graded according to the American Association for Surgery of Trauma, with grades III, IV and V renal injury in six, four and three children, respectively. All patients were treated initially by observation; one required super-selective embolization because of continuing haemorrhage. Three children with progressive urinary extravasation were treated with a percutaneous tube drain and JJ stent for 6 weeks. Patients were discharged after a mean (sd) hospital stay of 9 (6) days. Ultrasonography then showed resolving haematoma in all patients with a mean (sd) size of 7 (2) cm (2). At the last follow-up patients were re-evaluated by a clinical examination, renal scintigraphy and computed tomography angiography.

**Results:** None of the children was hypertensive nor had any abnormality on urine analysis; all had normal serum creatinine levels, and scintigraphy and angiography showed normal contralateral kidneys in all. Ipsilateral abnormalities were detected in 12 patients, and included a single scar in five, multiple scars in six