

## **IS NECESSARY ANTI-REFLUX SURGERY AT THE TIME OF AUGMENTATION CYSTOPLASTY FOR CHILDREN WITH NEUROGENIC BLADDER AND HIGH GRADE VESICoureTERAL REFLUX?**

### **Hypothesis / aims of study**

Vesicoureteral reflux (VUR) in patients with neurogenic bladder is often eliminated by correction of abnormal bladder dynamics by conservative management including intermittent catheterization and anticholinergics. However, VUR that is refractory to conservative treatment does exist in some patients and is the cause of progressive upper tract deterioration. Augmentation cystoplasty is the last resort for these problems. Whether augmentation cystoplasty alone or in combined with antireflux surgery should be performed is quite controversial. We analyzed our experience of augmentation cystoplasty without antireflux surgery in patients with neurogenic bladder and high grade VUR.

### **Study design, materials and methods**

Since August 1998, 2 males and 3 females with poorly compliant bladder and high grade VUR (grade III or more according to international classification) have undergone augmentation ileocystoplasty without anti-reflux surgery. Underlying disease was myelomeningocele in all patients. Maximum conservative treatment failed in all patients, and a temporary cutaneous vesicostomy was performed in 1 patient at age of 6 months. Hydronephrosis was observed in 5 kidneys of 4 patients preoperatively. VUR was bilateral in 3 patients and unilateral in 2, and their grades were II in 1 ureter, III in 5 ureters and IV in 2 ureters. Intravesical pressure at VUR occurrence ranged from 2 to 36 cmH<sub>2</sub>O (mean 11.8). Mean age at operation was 11.9 years (range 3 to 19), and postoperative follow-up periods ranged from 2 to 52 months (mean 23 months).

### **Results**

All patients underwent videourodynamic study postoperatively. Mean bladder capacity and bladder compliance increased from 220 ml (range 90 to 350) and 5.1 ml/cmH<sub>2</sub>O (range 2.5 to 8.5) preoperatively to 412 ml (range 250 to 500) and 29 ml/cmH<sub>2</sub>O (range 25 to 31) postoperatively, respectively. VUR disappeared in 7 ureters (grade IV in 1 ureter, grade III in 5 ureters and grade II in 1 ureter) and improved in 1 ureter (from grade IV to grade II) within 2 years postoperatively. Hydronephrosis in 5 kidneys was all resolved postoperatively. Febrile urinary tract infection occurred in only one patient with down-grading but persisting VUR, in whom reeducation with intermittent catheterization regimen was successfully introduced to prevent recurrent urinary tract infection.

### **Interpretation of results**

Surgical correction of abnormal bladder dynamics resolved or improved VUR and hydronephrosis in patients with neurogenic bladder and VUR.

### **Concluding message**

Results in this study indicate that anti-reflux surgery is not required at the time of augmentation cystoplasty for patients with end-stage neurogenic bladder and high grade VUR.