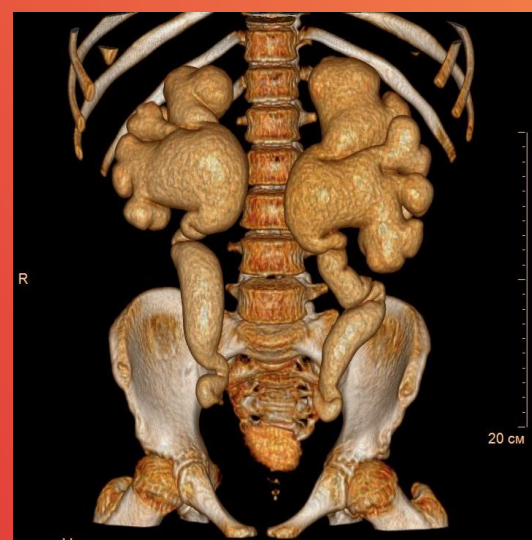




Lower Urinary Tract Function in Children with Bilateral Megaureter in the Long-Term Follow up.

Hypothesis / aims of study

In the treatment of patients with bilateral megaureter, the primary focus has long been on correcting upper urinary tract urodynamics and preserving renal function in early childhood. However, long-term outcomes demonstrate that the pathophysiology of the disease is not limited to the upper urinary tract.

Lower urinary tract dysfunction is a key factor determining the long-term prognosis, regardless of the initial causes of megaureter.

Study design, materials and methods

An analysis of treatment and long-term follow-up of 200 patients (183 boys and 17 girls) with bilateral congenital megaureter, 57 of whom were followed for more than 15 years, was conducted.

In the majority of patients (168), megaureter developed in the setting of bladder outlet obstruction (posterior urethral valves, hypospadias with meatal stenosis, urogenital sinus, caudal regression syndrome), leading to lower urinary tract dysfunction.

Correction of bladder outlet obstruction was a mandatory initial step in the treatment of each patient. Lower urinary tract function was assessed by voiding diaries, uroflowmetry, cystometry, VCUG, and cystoscopy.

Results

Assessment of the functional state of the urinary tract was performed annually at all stages of patient follow-up. The main significant time points for this analysis were age 4-5 years (the stage of proper formation of a mature voiding pattern) and the age of transfer of the patient to adult care.

Interpretation of results

It was established that only 12% of patients (24) had developed a correct voiding pattern with completely restored bladder storage function by the age of 4-5 years. Symptoms of bladder overactivity with non-adapted contractions and urge urinary incontinence prevailed at this age in 120 patients (60%). Dysfunctional voiding with or without bladder overactivity was identified in 80 boys (40% of patients). A lazy bladder hypotonic, hyporeflexive with large capacity and a high residual urine volume (>60% of capacity), necessitating the use of scheduled voiding or intermittent catheterization, was established in 28 of patients by this age, requiring early intermittent urinary diversion. By adolescence, patients who previously had functional disorders such as overactive bladder or dysfunctional voiding were corrected almost completely, but 10% of them (21) developed a hypotonic bladder with a diminished reflex, necessitating the provision of intermittent diversion at a later stage.

Concluding message

Long-term outcomes demonstrate that the clinical stability of lower urinary tract function may be unstable. Even with relative well-being during childhood, deterioration of function with the development of bladder hypotonia can occur during adolescence. This necessitates long-term (until reaching adulthood) monitoring of urodynamic status.