

THE LOWER URINARY TRACT SYMPTOMS ARE ASSOCIATED WITH SPINA BIFIDA OCCULTA IN CHILDREN

Hypothesis / aims of study

The lower urinary tract symptoms (LUTS) are common complaints in childhood, including nocturnal enuresis, isolated diurnal enuresis, urinary urgency, frequency and incontinence, dysuria, intractable urinary tract infection, and vesicoureteral reflux. Spina bifida occulta (SBO) is a developmental variant of lumbar and sacrum. The association between LUTS and SBO is still controversial.

Study design, materials and methods

A total of 113 children with LUTS underwent plain abdominal radiography, magnetic resonance (MR), intravenous urography and urodynamic measurements. The incidence of SBO in these children was compared with 226 sex- and age-matched controls. Thirty-six SBO children with LUTS also underwent individualized biofeedback training and electric stimulation therapy based on the investigation results.

Results

The prevalence of SBO in the LUTS groups was 42.48%, it was significantly higher than that in the control group (23.9%; $P < 0.05$). In the LUTS children with SBO, various abnormal urodynamic presentations were obtained (46/48, 95.83%). The abnormal urodynamic presentations included detrusor instability (DI, $n=22$), detrusor underactivity ($n=21$), decreased maximum flow rate (Q_{max} , $n=18$), decreased bladder capacity ($n=15$), increased post-void residual urine (PVR, $n=12$), decreased bladder compliance (BC, $n=7$), detrusor external sphincter dyssynergia ($n=4$) and decreased urethral pressure ($n=4$). The frequency of DI, increased PVR and decreased bladder compliance were more often in LUTS children with SBO compared with those in LUTS children without SBO. Thirty-six children received individualized biofeedback training and electrical stimulation treatment and 26 reported sustained symptomatic improvement with less urinary urgency, frequency and incontinence and less dysuria. The recovery rate was 72.2% (26 of 36).

Interpretation of results

1. The prevalence of SBO in the LUTS groups was higher than that in the control group.
2. Abnormal urodynamic presentations were obtained in most of the LUTS children with SBO.
3. The frequency of DI, increased PVR and decreased bladder compliance were more often in LUTS children with SBO compared with those in LUTS children without SBO.
4. Thirty-six children received individualized biofeedback training and electrical stimulation treatment and 26 reported sustained symptomatic improvement with less urinary urgency, frequency and incontinence and less dysuria. The individualized biofeedback training plus electrical stimulation treatment is an effective method for LUTS.

Concluding message

LUTS in children are associated with increased prevalence of SBO. Individualized biofeedback combined with electrical stimulation can improve both the symptoms and urodynamic function.

Disclosures

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