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Shibata T[1], Tanaka H[1], Kakizaki H[1], Moriya K[1], Furuno T[1], Mitsui T[1], Koyanagi T[1]
1. Dept. of urology, Graduate School of Medicine, Hokkaido University

OUTCOMES OF THE UROLOGICAL MANAGEMENT OF CHILDREN WITH MYELOMENIMGOCELE BASED ON VIDEOURODYNAMIC MONITORING FROM EARLY AGE.

Aims of Study

Urodynamic monitoring of the lower urinary tract of children with myelomeningocele is important in deciding bladder management. We have shown in the previous report that high urethral resistance, as determined by detrusor leak point pressure (dLPP) or maximum urethral closing pressure, correlates well with deterioration of the upper urinary tract (J Urol, 161:929-932,1999). We have employed the video-urodynamic study for deciding management of urinary tracts in patients with myelomeningocele. We focused on outcomes of management of the urinary tract monitored from early age (before 2 years of age) by video-urodynamic study.

Methods

Twenty-four patients with spina bifida aperta who underwent immediate closure surgery for open spinal lesions and then had initial urodynamic evaluation before 2 years of age were analysed. Patients underwent at least one video-urodynamic study and serial monitoring of the vesical pressure as well as evaluation of the upper urinary tract by periodical renal ultrasound +/- DMSA renal scintigraphy. Clean intermittent catheterization (CIC) was instituted in the high risk patient group defined by McGuire et al. as dLPP over 40 cmH_2O or in patients with low dLPP and significant vesicoureteral reflux (VUR) or severe bladder deformity.

Results

Median age at initial urodynamic evaluation at our clinics is 10 month (range: 1 month to 23 month). Nine children with dLPP more than 40 cmH_2O were classified as the high risk group and placed on CIC management. In the remaining 15 patients in the low risk group, 2 children were placed on CIC because of significant VUR and bladder deformity. VUR were confirmed at initial evaluation in 8 (33%), 4 in both high and low risk group each, and disappeared in 2 in the high risk group and in 1 in the low risk group. Febrile urinary tract infection (UTI) was noted in 5 in the high risk group and in 1 in the low risk group, respectively, during the follow-up. Four (26%) out of 15 children in the low risk group at the initial evaluation needed institution of CIC later because serial urodynamic studies showed high dLPP in 3 and UTI with VUR was noted in 1. Three (13%) in the high risk group, in whom upper urinary tracts were progressively deteriorated and UTI were not controlled despite frequent CIC and anti-cholinergic agents, underwent cutaneous vesicostomy, awaiting ileocystoplasty. They showed significant renal scars on DMSA renal scintigraphy. Except for these 3, UTI occurred only in 2 children on CIC and in 1 on diaper, and the upper urinary tracts were well preserved on the ultrasound +/- DMSA renal scan during the follow-up.

Conclusions

In most children with myelomeningocele, upper urinary tracts were well preserved and UTI was controlled by management of urinary tracts based on the findings of video-urodynamic monitoring. However, it should be stressed that there exist certain numbers of children who are resistant to the conservative management by institution of frequent CIC and anti-cholinergic agents from infantile age. They need prompt decompression of urinary tracts before deterioration of upper urinary tracts by the procedure such as cutaneous vesicostomy.