57

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LONG-TERM OUTCOMES OF LOWER URINARY TRACT FUNCTION IN PATIENTS WITH OCCULT SPINAL DYSRAPHISM: CAN EARLY NEUROSURGERY PROMISE BETTER OUTCOMES IN THE LONG-TERM ?

Aims of Study

Occult spinal dysraphism (OSD), such as lumbosacral lipoma, diastematomyelia, tight filum terminale, causes the tethered cord syndrome and is often accompanied with lower urinary tract (LUT) dysfunction. In contrast to meningomyelocele that is associated with lumbosacral skin defect, the timing of neurosurgical interventions for OSD is controversial. Although the early neurosurgery for OSD has been recommended to preserve or normalize LUT function, long-term outcomes after early neurosurgery have not been addressed convincingly. We retrospectively analysed the long-term status of LUT function in patients with OSD and compared the outcomes depending on the age at neurosurgery.

Methods

37 patients with OSD were divided into 2 groups depending on the age at neurosurgery; less than 2 years in the early surgery (ES) group (15 patients) and 2 years or more in the late surgery (LS) group (22 patients). Mean age at presentation and postoperative follow-up periods were 7 months and 8.3 years in ES group and 9.5 years and 3.8 years in LS group, respectively. OSD was diagnosed because of asymptomatic sacral cutaneous abnormality in 13 (87%) and urinary or neurological symptoms in 2 (13%) in ES group and in 8 (36%) and 14 (64%) in LS group, respectively. Major urinary symptoms in LS group were urinary incontinence, nocturnal enuresis and voiding difficulty. In each patient, LUT function was evaluated with voiding cystourethrography and urodynamics before and serially after neurosurgery.

Results

In ES group, LUT function before neurosurgery was normal in 12 (80%) and abnormal in other 3 (20%). Of the 12 patients with normal LUT function before neurosurgery, de novo LUT dysfunction after neurosurgery was found in 7 (58%). Of the 3 patients with LUT dysfunction before neurosurgery, LUT dysfunction was improved in 1 (33%) and persisted in the remaining 2. In LS group, LUT function was normal in 10 (45%) and abnormal in other 12 (55%). Of the 10 patients with normal LUT function before neurosurgery, de novo LUT dysfunction after neurosurgery was found in 6 (60%). Of the 12 patients with LUT dysfunction before neurosurgery, LUT dysfunction was improved or normalized in 3 (25%) and persisted in the remaining 9. Thus, in overall, the benefits of neurosurgery (preservation of normal LUT function or improvement of LUT function) were seen in 6 of 15 patients (40%) in ES group and 7 of 22 (32%) in LS group. In 2 patients (one each in ES and LS group) with normal LUT function before and after neurosurgery, long-term deterioration of LUT function was seen 13 to 15 years after neurosurgery.

Conclusions

Neurosurgery for OSD did normalize or improve LUT function in 25 to 33% of patients with LUT dysfunction irrespective of the age at neurosurgery. However, the present study revealed a relatively high incidence of de novo LUT dysfunction after neurosurgery for OSD (about 60% in both ES and LS groups). The benefits of early neurosurgery for OSD were not confirmed in the present study. Thus, the rationale for early prophylactic neurosurgery in patients with asymptomatic OSD should be reconsidered. In addition, the possibility of long-term deterioration of LUT function should be informed before neurosurgery so that a long-term follow-up will be assured.