Craniocervical decompression with duraplasty and cerebellar tonsillectomy as treatment for Chiari malformation-I complicated with syringomyelia


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ABSTRACT. This study aimed to investigate the therapeutic effects of craniocervical decompression with duraplasty and cerebellar tonsillectomy for the treatment of Chiari malformation-I with syringomyelia (CM I-SM). From January 2005 to December 2011, 127 patients with CM I-SM underwent craniocervical decompression with duraplasty and cerebellar tonsillectomy and the therapeutic effects of these surgeries were evaluated using Tator scores. No patient in this study died or showed disease deterioration after the surgery. Re-examination by magnetic resonance imaging (MRI) showed that the cisterna magna was obviously larger after the operation in all but one patient. Moreover, syringomyelia (SM) was reduced in 76 patients. CM I-SM symptoms disappeared or decreased in 112 patients after following discharge. Follow-up was conducted in 84 of the patients and 79 of these patients exhibited improved symptoms. A second MRI re-examination showed that the cisterna magna was successfully constructed in 44
patients; 42 of these patients showed further eliminated or obviously reduced SM. Craniocervical decompression with duraplasty and cerebellar tonsillectomy achieved favorable therapeutic effects. Thus, craniocervical decompression with duraplasty and cerebellar tonsillectomy is a rational surgical approach with beneficial clinical effects. The proposed approach may have useful applications in the treatment of CM I-SM.

**Key words:** Chiari malformation; Syringomyelia; Surgery; Duraplasty; Craniocervical decompression; Cerebellar tonsillectomy