

Effect of Vestibular Rehabilitation on Vestibular Dysfunction with deafness and Cognitive Impairment

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Introduction

In children, vestibular function plays an important role in the gross motor development and postural control. Children with congenital deafness commonly suffer from vestibular dysfunction in bilateral ears and difficulty of postural control. There have been very few studies which have investigated balance in these children. Furthermore there has been no study about the postural control in patients who have vestibular dysfunction with hearing impairment and cognitive impairment . We report a case of vestibular rehabilitation on a patient with cognitive impairment and mixed hearing loss who has bilateral vestibular dysfunction.

Case report

The patient was a 34-month-old boy who had congenital vestibular abnormality with deafness. He was diagnosed mixed hearing loss and underwent left cochlear implant when he was 29 months old (Pure Tone Audiometry (PTA) > 60dB). And he had hypoxic brain injury when he was 23 months old due to respiratory arrest. He had cognitive impairment (Denver Developmental Screening Test : personal-social domain : 13 months, language domain: 3 months) and impaired at obey commands . He was hospitalized at pediatric rehabilitation center, and had vestibular rehabilitation with Bobath therapy, occupational therapy and cognitive rehabilitation during 6 weeks. At first, his Berg balance scale (BBS) score was zero. 3 weeks later, BBS score improved to 5. After 6-week training, BBS score improved to 19.

Discussion

Vestibular rehabilitation with comprehensive rehabilitation therapy is effective in vestibular dysfunction patients with cognitive impairment and hearing loss.