Bilateral Globus Pallidus Internus Deep Brain Stimulation for Dystonic- Choreoathetoid Cerebral Palsy in Children Faisal Al Otaibi MD; Amal Mokeem; Thamer Alkhairallah; Moh'd Almuhaizea

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Introduction

Children with cerebral palsy (CP) may present with dystoniachoreoathetosis, which is a significantly disabling movement disorder. Here, we investigate the effectiveness of globus pallidus internus (GPI) deep brain stimulation (DBS) in children with dystonicchoreoathetoid CP.

Methods

A retrospective study of four patients with dystonic-choreoathetoid CP was conducted between May 2011 and October 2013. The primary efficacy endpoint was the relative change of the Burke-Fahn-Marsden Dystonia Rating Scale (BFMDRS) after DBS. The DBS leads and internal pulse generator were implanted in one session under general anesthesia and microelectrode recording. The mean age at DBS implantation was 10.75 years (range 7–14 years). The mean follow-up period was 8.5 months (range 5–11 months). The stimulation parameters are as follows: 130 Hz, 60–90 µs, 2–3.6 V. The BFMDRS movement score was from 52.6 to 38.9 after DBS. The dystonic component and spasm responded to DBS more than the choreoathetoid movements. One patient had a direct trauma to the internal pulse generator that required a replacement.

Conclusions

Results

Bilateral GPI-DBS resulted in functional benefit for pediatric patients with dystonicchoreoathetoid CP. It could be considered a treatment option for this group of patients. The small group of patients limits the findings of this study and mandates further investigation with a large group of patients

Learning Objectives

Bilateral GPI-DBS could be an effective treatment for dystonicchoreoathetoid cerebral palsy.

References