ABSTRACT

Functional results in single event multilevel surgery in cerebral palsy patients. Teletón Institute Santiago-Chile. 2010-2013

Introduction: The single event multilevel surgery (SEMLS) is a procedure preferably for patients with cerebral palsy (CP), including several orthopedic surgeries in one surgical time, and involves at least two levels joints of lower extremities, seeking to optimize gait. It is based on biomechanical principles provided by the gait lab (GL). Objective: To evaluate the impact of SEMLS in the gait of patients with CP spastic diplegia, one year after surgery. Patients and Methods: Retrospective study with review of medical records of 61 patients undergoing SEMLS. 23 out of 61 subjects accomplished the inclusion criteria. GL data before and after surgery was summarized in Gait deviation index (GDI), cadence and velocity, as well as functional mobility scale (FMS). Patients were categorized in two groups according to the Gross motor function classification system (GMFCS) as “A” for I-II GMFCS and “B” for III GMFCS. Statistical comparison was performed using Wilcoxon test. Results: The average SEMLS include 6.19 procedures per patient. Overall, significant variations in GDI (p < 0.0001) and cadence (p < 0.007) were found. In the subgroup A, there were significant changes in all GL variables (p < 0.009). In subgroup B, a significant effect was only found for GDI. Although FMS showed improvement, it was not statistically significant for 50 m and 500 m, in both subgroups and the total population (14 patients). Conclusion: Significant improvement was seen in CP spastic diplegic patients, for both cadence and GDI after one year SEMLS, particularly in the subgroup with independent walking.

Key words: Single event multilevel surgery (SEMLS), cerebral palsy, spastic diplegia, gait lab, functional mobility scale.