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Health-related Quality of Life Following Selective Percutaneous Myofascial Lengthening & Functional Physiotherapy in Children with Cerebral Palsy



Vasileios C. Skoutelis¹, Anastasios Kanellopoulos², Stamatis Vrettos³, Vasileios Kontogeorgakos^{1,4}

¹Medical School, National & Kapodistrian University of Athens, Greece; ² Orthopedic Centre, Iaso Children's Hospital, Greece; ³E-N-A pediatric physiotherapy centre, Greece;

⁴First Department of Orthopedics, Attikon General University Hospital, Greece

Introduction

Even though cerebral palsy (CP) is a static encephalopathy, the secondary musculotendinous contractures are progressive.

The development of fixed contractures, between the age of 5 to 8 ages, has negative impact on skeletal alignment –raising much severer musculoskeletal pathology–, gross motor function and on quality of life. Surgery for correction of fixed contractures has been shown to improve functioning and quality of life.

Selective percutaneous myofascial lengthening (SPML) is a new, minimally invasive surgical method, often combined with alcohol nerve blocks, which is used alternatively to traditional open surgical lengthening.¹

However, there is little evidence supporting better health-related quality of life for children with CP after SPML procedure.² Besides, there is no study examining the effects of a comprehensive programme of SPML procedure and specific post-surgical physiotherapy protocol, based on functional (strength) training.³

Purpose

To evaluate the health-related quality of life following SPML procedure and functional physiotherapy in school-aged children with spastic CP.

Participants

Inclusion Criteria

- ➔ spastic uni/bilateral CP
- ➔ 5-7 years
- ➔ GMFCS levels II-IV
- ➔ Normal/good cognition
- ➔ Hip ext str > grd 2

Exclusion Criteria

- ➔ BoNT-A within last 6 months
- ➔ Previous orthopedic procedure
- ➔ Need for concomitant osteotomy

Methods

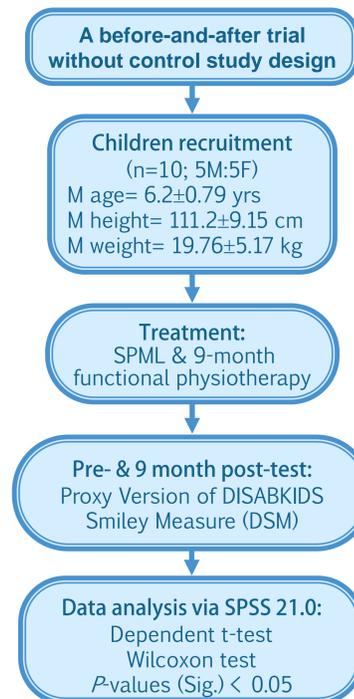


Figure 1 • Flow diagram of the study.

Results

After 9-month of intervention the children with CP showed significantly higher quality of life scores (mean pre-post difference=13.34±12.70, $p=0.009$) in the DSM.

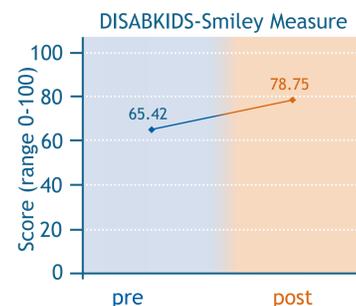


Figure 2 • Mean DISABKIDS-Smiley Measure scores before & after 9 months of intervention.

Results

By analyzing the values in each item of the DSM, it is observed that the children had significantly better emotional well-being (item-1, $p=0.020$) and higher self-concept when they compare themselves to others (item-6, $p=0.026$), following SPML procedure and a 9-month post-surgical functional physiotherapy.

There were no statistically improvements in self-esteem (item-4, $p=0.096$), self-confidence (item-3, $p=0.317$) and emotional status about the consultation with the doctor (item-2, $p=0.059$) and the school (item-5, $p=0.096$).



	1	2	3	4	5
1. My child feels...					
pre	1	5	2	2	
post	3	6	1		
2. When my child goes to the doctor he/she feels...					
pre		1	8	1	
post	1	3	6		
3. When my child does things on their own they feel...					
pre	5	4		1	
post	7	1	2		
4. About him-/herself my child feels...					
pre	3	3	2	2	
post	3	6	1		
5. School makes my child feel...					
pre	3	3	3	1	
post	4	5	1		
6. When my child compares him-/herself to others he/she feels...					
pre	1	4	2	2	1
post	3	6	1		

Figure 3 • Changes of scores in each of the 6 items of DISABKIDS-Smiley Measure.

Clinical Implications

These results illustrated the beneficial effect of the SPML procedure and post-surgical functional physiotherapy on the general quality of life and the level of distress in children with CP.

The children appeared to gain better psychosomatic functioning and well-being, which are critical aspects of participation in life situations.

Conclusions

This study demonstrated that the children with CP presented better health-related quality of life after a comprehensive programme of SPML procedure and functional physiotherapy.

Further study is currently underway, with a larger sample size, to verify these findings.

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Ethics Approval

Approved by the Scientific Council of the Attikon University General Hospital, Greece
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Contact details: vskoutelis@gmail.com
Further information: www.kids2walk.com

