

# Single Event Multilevel Surgery In Spastic Patient : A Hospital Tengku Ampuan Afzan (HTAA) Experience

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## INTRODUCTION:

Single event multilevel surgery (SEMLS) is common procedure to improve gait and functioning of children with spastic cerebral palsy (CP). The case series is aim to observe the post-operative outcomes of gross motor function (GMFCS) and hip migration index (MI) in spastic patient.

## MATERIALS & METHODS:

Patient underwent SEMLS at HTAA from 2014 to 2018. The data were data taken from case notes during follow-up at rehabilitation clinic.

## RESULTS:

There were 10 patients, 6 were boys. Mean age at surgery was 6.6 years old. 7 having spastic diplegic CP and 1 each having triplegic and quadriplegic CP.

## Figure 1: Type of surgery

Patient	Adductor release	Hamstring release	Gastrocnemius recession	Tendon achilles lengthening	Postero medial release
1	B/1	B/1			
2	B/1	B/1	B/1		
3	B/1	B/1			
4	B/1	B/1			
5		B/1		B/1	Left
6	B/1	B/1			
7	B/1				
8	B/1	B/1			
9	B/1	B/1			
10	B/1	B/1			

\* B/1 = Bilateral

2 patients had second surgery at 1 year apart: 1 underwent talipes equinovarus deformity correction and another had repeated SEMLS. Only 5 patients had pre and post-operative pelvis

radiograph where 4 patients (80%) improved in hip MI.

## Figure 2: Improvement of GMFCS level

Patient	GMFCS		Level improvement
	Pre	Post	
1	IV	III	1 level
2	II	II	0
3	III	III	0
4	IV	III	1 level
5	V	V	0
6	IV	III	1 level
7	IV	IV	0
8	III	II	1 level
9	III	III	0
10	V	V	0

40% of patient have 1 level improvement. 75% of patients with GMFCS IV had improvement compared to GMFCS III (33%).

## DISCUSSIONS:

73.5% has good improvement of hip MI postoperatively with 0.3% risk of hip surgery<sup>1</sup>. Incidence of hip displacement related to GMFCS level<sup>2</sup>. Evidence proved that SEMLS improved gait<sup>3</sup> and stability of GMFCS<sup>4</sup>.

## CONCLUSION:

SEMLS may affect the improvement and stability of GMFCS level and hip MI; and that effect may be level-dependent.

## REFERENCES:

1. Terjesen et al, Acta Orthopaedica, 2009.
2. Kentish M. et al, Journal of Paediatric Rehabilitation Medicine, 2011.
3. Thomason et al, JBJS, 2011.
4. Godwin et al, Journal of Paediatric Orthopaedic, 2009.