



Impact of New Motor Deficit on HRQOL After Adult Spinal Deformity Surgery

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Introduction

The Scoli Risk 1 study found a 30.9% risk of lower extremity motor score (LEMS) worsening within the first 6 months after correction of severe spinal deformities. The purpose of this analysis was to define the impact of new LEMS deficit on health-related quality of life (HRQOL) metrics and recovery of those measures after surgery in the first 6 months.

Learning Objectives

1. Understand that this was an ambispective, multi-center observational study, completed to determine the impact of neural injury on Health-related Quality of Life scores (HRQOLs).
2. Understand that 30.9% of patients suffered any ASIA lower extremity motor score (LEMS) worsening during the first 6 months after surgery.
3. Know that within 3 subcategories of LEMS change (=2 points worsening, 1 pt worsening to no change, or LEMS improvement), ODI, SRS, SF-36 mental, and SF-36 physical scores worsened with LEMS worsening at 6 weeks and 6 months.

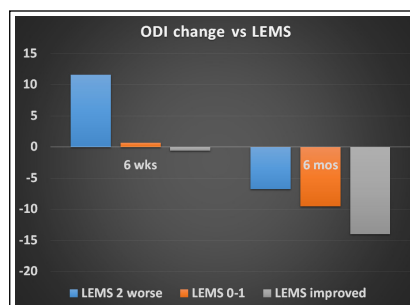
Methods

Adult spinal deformity patients were eligible for enrollment at 15 sites worldwide. Other inclusion criteria included major Cobb >80 degrees, C7-L2 curve apex, and any patient undergoing 3 column osteotomy. ASIA scores and standard HRQOL scores were recorded pre-op, 6 weeks and 6 months.

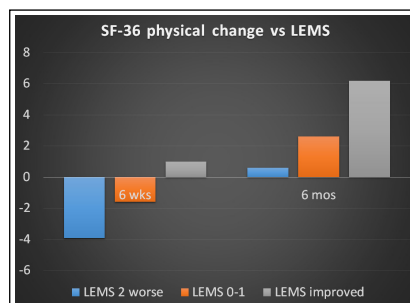
Results

273 complex adult spinal deformity (ASD) patients enrolled, with 184 female (67%) and 89 male (33%) patients. Mean age was 56.9 years (SD 15.3, range 18-81). 30.9% of patients suffered LEMS worsening within the first 6 months post-surgery. HRQOL scores worsened as LEMS worsened.

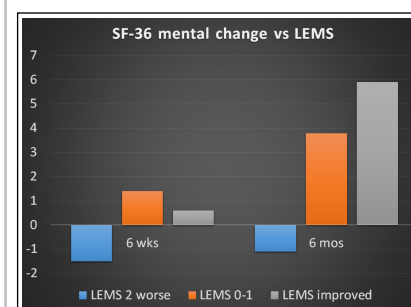
The 6 week HRQOL changes for LEMS ≤ 2 patients vs LEMS -1 to 0 vs improved LEMS patients were as follows. At 6 weeks, ODI worsened by 11.6 in the LEMS ≤ 2 group, 0.7 in the LEMS -1 to 0 group and improved by 0.6 in the improved LEMS group. At 6 months, ODI improved by 6.8, 9.5, and 14 in the 3 groups, respectively:



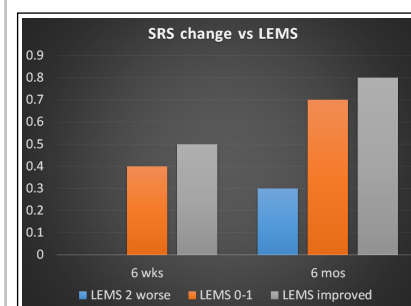
At 6 weeks, SF-36 physical worsened by 3.9 in the LEMS ≤ 2 group, 1.6 in the LEMS -1 to 0 group and improved by 1.0 in the improved LEMS group. At 6 months, SF-36 physical improved by 0.6, 2.6, and 6.2 in the 3 groups, respectively.



At 6 weeks, SF-36 mental worsened by 1.5 in the LEMS ≤ 2 group and improved by 1.4 in the LEMS -1 to 0 group, and 0.6 in the improved LEMS group. At 6 months, SF-36 mental changed by -1.1, 3.8, and 5.9 in each of the 3 groups, respectively.



At 6 weeks, SRS total change was no different in the LEMS ≤ 2 group, improved by 0.4 in the LEMS -1 to 0 group and 0.5 in the improved LEMS group. At 6 months, SRS total improved by 0.3, 0.7, and 0.8 in the 3 groups, respectively.



Conclusions

In the subgroup of patients who developed a new lower extremity motor deficit after adult spinal deformity surgery, total HRQOLs and HRQOL changes were negatively impacted. Patients with 2 or more points of LEMS worsening had the worst HRQOL changes. However, even these patients showed overall improvement in ODI, SF-36 physical and SRS total scores at 6 months compared to pre-op baseline.

While the database is not yet locked, these data are subject to minor changes.