

Quality of Life and Sagittal Alignment after Surgical Correction of Adult Spinal Deformity with Posterior Instrumentation

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Background

The role of improved sagittal alignment in long term clinical outcomes for correction of Adult Spinal Deformity (ASD) is not well established. The evaluation of the relationship between QOL outcomes and long term radiographic correction of spinal imbalance, were the goals for this study.

Hypothesis

Improvement of quality of life measurements has a strong correlation with correction of sagittal imbalance in Adult Spinal Deformity

Study design

Multi-center international prospective cohort study (USA; UK, FR)

Materials & methods

Local IRB obtained for all centre

Inclusion criteria: at least one SRS-Schwab classification parameter over the threshold; age ≥ 21 years old; 4 or more operated levels;

Exclusion Criteria: vertebral column resection; neuromuscular scoliosis recent trauma; spinal cord abnormalities; metabolic spinal pathology; pathologic obesity; osteomyelitis; pregnancy; and insulin dependent diabetes.

Follow-ups: 3, 6, 12, and 24 months.

QOL assessment: Oswestry Disability Index (ODI) and Scoliosis Research Society Scale (SRS22).

Sagittal alignment indices: sagittal vertical axis (SVA); lumbar lordosis (LL); thoracic kyphosis (TK); pelvic incidence -LL mismatch (PI-LL); and pelvic tilt (PT).

ANOVA was used for statistical analysis

Cohort

- 54 patients were included
- 14 male (26%) / 40 female (74%)
- Mean age 62.1y (SD: 11.3)
- 85% had at least a SPO
- 20% had PSO
- Follow-up at 2years was 81.5%

Results

- Preoperative mean ODI, 21.1 (SD: 7.5) and SRS22, 2.68 (SD: 0.9) were improved to 14.5 (ODI) and 3.64(SRS22) at 24months follow up ($P < 0.0001$);
- At 2Y follow-up 95% of patients positively evaluated the treatment outcomes and would undergo the surgery again.
- Sagittal alignment significantly improve at 12months (Δ PI-LL $p = 0.007$; SVA $p < 0.006$). Only a trend of significant change was still observed at 24months (Δ PI-LL $p = 0.066$) as 23.7% of patients had a loss of lordosis

Conclusion

- Significant improvement of the quality of life can be explained by correction of the spinal deformity, stabilization of spine, and effect of decompression.
- Interestingly and despite high variability among different centers, slight disability at baseline and, some radiological deterioration, quality of life and patient satisfaction remain very good and significant at last follow-up

Advantages	Limits
Multicentre & international study	Small cohort
2 years follow-up	Non-comparative study

Disclosure

- V. Fiere : consulting Medicrea, Clariance