

Hypothesis: Correction of CM >20mm improves significantly clinical outcomes after ASD surgery  
Study Design: Retrospective study based on a prospective multicenter cohort of patients who underwent ASD corrective surgery and had pre-operative CM of more than 20mm (CM>20mm)

Introduction:

CM after ASD surgery is correlated with poor functional outcomes. Previous studies showed that coronal realignment leads to significant improvements in Patient-Reported Outcomes Measures (PROMs) for severe CM. If associated with global tilt (GT) correction, CM correction also improves PROMs. This study aims to evaluate the correlation between CM correction and functional outcome improvements at 2-year minimum follow-up

Methods:

258 surgical patients were included with a preoperative CM>20mm and at least 2 years follow-up. Correlation studies between the Central Sacral Vertical Line (CSVL) malalignment and functional score (ODI, SRS22r and SF36) were undertaken. Factors influencing PROM improvements that reach Minimum Clinically Important Difference (MCID) were studied in a multivariate analysis.

Results:

There was a statistically significant correlation between CM and SRS22r total score. Post-operative CM>20mm was correlated with a worse quality of life for all subdomains of the SRS22r but only with standing in ODI and body pain in SF36 questionnaires. Conversely, CM<20mm, a greater pelvic incidence and preoperative lumbar lordosis, greater sagittal plane correction were observed in the SRS 22r improvement group in univariate analysis. In multivariate analysis, a post-operative CM<20mm resulted in 3.5 times greater chance to obtain SRS22r questionnaire improvements that reached MCID (>0,77 over 5 points). Multivariate analysis showed that in addition to postoperative CM<20mm, good physical status (ASA), GT and pelvic fixation correlated independently with SRS22r improvement

Conclusion:

CM correlates independently with PROMs especially SRS22r questionnaire. CM correction to less than 20mm is independently correlated to SRS22 total score improvement that reached MCID, OR= 3,5; ODI and SF36 are less affected. As a result, CM<20mm may be considered as a reasonable target to aim to in ASD surgery.

