

The Schwab-SRS Adult Spinal Deformity Classification: Assessment and Clinical Correlations Based On a Prospective Operative and Non-Operative Cohort

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Introduction: The Schwab-SRS Classification (fig. 1) of Adult Spinal Deformity (ASD) is a validated system that provides a common language for the complex pathology of ASD. Classification reliability and reproducibility have been reported; however, correlation with treatment has not been assessed.



Methods: Prospective analysis of consecutive ASD patients from a multicenter spinal deformity study group. Inclusion criteria: ASD, age>18 yrs, Cobb angle>20°, sagittal vertical axis (SVA)>5cm, pelvic tilt (PT)>25° or thoracic kyphosis (TK)>60°. All patients had 36″ standing x-rays. Differences in demographics, health related quality of life (HRQOL: ODI, SRS, SF36), and classification curve type/modifier distribution between operative (Op) and nonoperative (NonOp) treatment were evaluated.

Results: 757 consecutive ASD patients were enrolled across participating sites. 572 were included in the analysis due to complete data. The average age is 52.5 years. Op patients have worse demographic outcomes (table 1).

Table 1: demographic outcomes						
	Ор	NonOp				
Distribution (%)	59.8	40.2				
Age *	55.8	50.2				
BMI *	27.7	25.5				
% previous surgery*	43.5	10.4				

Charlson commorbidity score was worse for patients with sagittal deformity, and increased with modifiers severity (Fig. 2, p < 0.001).





Op patients have significantly worse HRQOL scores than NonOp patients (Fig. 3, p < 0.001).

There were no significant difference between Op and NonOp in terms of curve types. However, Op patients have more pure sagittal deformation (NS). Distribution of the Op and NonOp patients, according to the modifiers, demonstrated that Op patients were more likely to have moderate (grade +) or severe (grade ++) modifiers (table 2, p<0.001).

Table 2: Distribution Op and NonOp by modifier								
%	PI minus LL		SVA		PT			
	NonOp	Ор	NonOp	Ор	NonOp	Ор		
+: moderate	18.2	18.3	22.1	25.1	30.8	37.4		
++: marked	20.8	36.5	9.7	29.2	14.3	25.1		

Conclusions: OP patients have worse HRQOL scores, deformity, and modifiers. The SRS-Schwab classification reflects surgeons choices.