

Outcomes in Surgery for Adolescent Idiopathic Scoliosis: Drivers of Satisfaction and Durability of Results

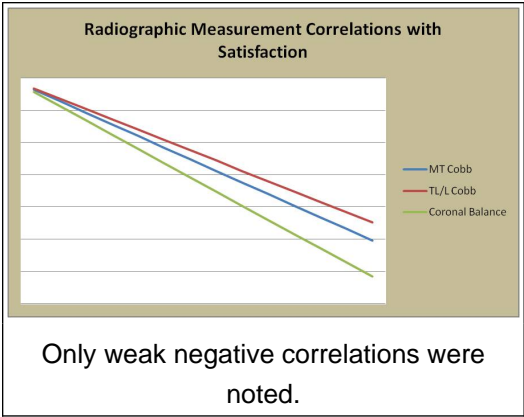
Ian G. Dorward MD; Keith Bridwell MD; Lawrence Lenke MD; Kevin O'Neill BA; Brian J Neuman MD; Terrence F. Holekamp MD, PhD; Azeem S Ahmad; Christine R Baldus

Introduction

Prior work has shown that SRS-30 pain scores for adolescent idiopathic scoliosis (AIS) patients worsen between 2 and 5 years postoperatively. Meanwhile, patient satisfaction is increasingly considered vital for outcomes, and thus satisfaction may be the most important domain of the SRS-30. It is unknown what domains correlate most strongly with--and may act as drivers for--satisfaction.

Methods

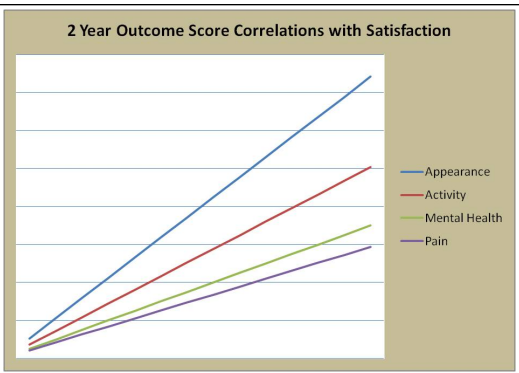
We reviewed SRS-30 scores and radiographs of 186 consecutive adolescents undergoing surgery for AIS from 2003-2009 at a single institution, with minimum 2 year follow-up. 57 patients had 5 year follow-up. Pearson correlations were calculated for the satisfaction domain and the other SRS-30 domains, as well as for satisfaction and radiographic variables.



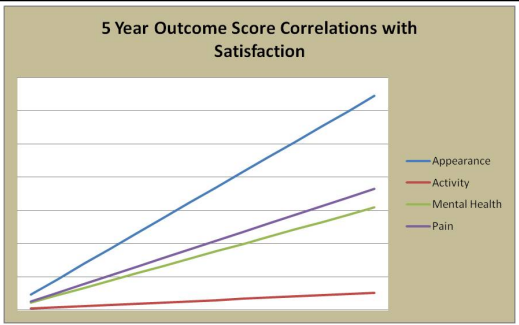
Results

SRS-30 scores improved in every domain at 2 and 5 year follow-up; satisfaction and appearance had the greatest change (2 years: satisfaction mean improvement + 0.86, appearance + 0.98; 5 years: satisfaction + 0.78, appearance + 0.90). No significant decrease was noted in any SRS-30 domain between the 2 and 5 year time points. At 2 years, appearance correlated more strongly with satisfaction ($r=0.53$, $P<0.0001$) than activity ($r=0.36$, $P<0.0001$), mental health ($r=0.25$, $P=0.0006$), or pain ($r=0.21$, $P=0.0039$). At 5 years, appearance had a stronger correlation with satisfaction ($r=0.46$, $P=0.0003$) than the other domains, for which significant correlations were not established (Pain: $r=0.26$, $P=0.053$; mental health: $r=0.22$, $P=0.11$; activity: $r=0.037$, $P=0.79$).

Radiographic variables showed only weak negative correlations with satisfaction at 2 years (MT Cobb: $r=-0.18$, $P=0.029$; TL/L Cobb: $r=0.16$, $P=0.059$; coronal balance: $r=-0.22$, $P=0.0092$).



Appearance correlates most strongly with satisfaction scores at 2 year follow-up.



Appearance correlates most strongly with satisfaction scores at 5 year follow-up.

	Mean change	Std Dev	Std Err	Minimum decrement	Maximum improvement	P-value
Pain	-0.0842	0.5731	0.0759	-1.8000	1.0000	<i>0.2721</i>
Appearance	0.0193	0.5149	0.0682	-1.4000	1.6000	<i>0.7783</i>
Activity	-0.0526	0.4097	0.0543	-1.4000	1.0000	<i>0.3363</i>
Mental Health	-0.1509	0.5748	0.0761	-1.4000	1.0000	<i>0.0524</i>
Satisfaction	-0.0833	0.7121	0.0969	-2.0000	1.5000	<i>0.3937</i>

No significant differences noted. No increase in pain at 5 yrs.

Learning Objectives

By the end of conclusion of this session, participants will be able to: 1) Describe the degree to which the various SRS-30 score domains correlate with patient satisfaction following surgery for AIS. 2) Note that the change in Cobb angles does not correlate strongly with patient satisfaction after surgery for AIS. 3) Understand that a previous study demonstrated a decrease in pain scores between 2 and 5 years postop, but that our study, with a larger series of AIS patients, did not show a decrease over the same time period.

References

Upasani VV, Caltoom C, Petcharaporn M, Bastrom TP, Pawelek JB, Betz RR, Clements DH, Lenke LG, Lowe TG, Newton PO. Adolescent Idiopathic Scoliosis Patients Report Increased Pain at Five Years Compared With Two Years After Surgical Treatment. *Spine* 33(10): 1107-12, 2008.

Conclusions

Appearance correlated most strongly with satisfaction at 2 and 5 years, while radiographic corrections were not strongly correlated. These findings suggest that the patient's perception of appearance—not the radiographic curve correction—drives satisfaction. Contrary to prior work showing decreased pain scores between 2 and 5 years, the SRS-30 scores in these patients showed durable improvements in all domains.