



Fig. E-1

Receiver operating characteristic (ROC) curve showing the predictive value of our multivariate analysis. The area under the curve was 0.82. The model was created using backward selection with a level of significance of 0.05 (binary GEE [generalized estimating equation] model with compound symmetry correlation structure).

TABLE E-1 Patient Characteristics			
	Patients without Spinal Deformity	AIS Group	P Value
No. of patients	95	91	
Sex (female/male)	42/53	68/23	<0.001*
Age† (yr)	15.3 ± 3.0	14.8 ± 1.9	0.118
Female	15.4 ± 2.9	14.4 ± 1.9	0.060
Male	15.3 ± 3.0	15.8 ± 1.7	0.380
Height† (cm)	162.8 ± 15.0	159.5 ± 10.2	0.076
Female	159.0 ± 10.9	157.0 ± 9.7	0.290
Male	165.9 ± 17.0	166.9 ± 7.9	0.770
Weight† (kg)	62.2 ± 24.8	58.8 ± 15.4	0.276
Female	58.8 ± 20.6	57.2 ± 13.9	0.650
Male	64.9 ± 27.6	63.6 ± 18.5	0.820
Height-growth percentile† (%)	50.8 ± 33.9	44.2 ± 30.0	0.178
Weight-growth percentile† (%)	56.6 ± 33.4	60.9 ± 29.9	0.367
*Denotes significance. †Values are presented as the mean and the standard deviation.			

TABLE E-2 Distribution of Pedicle Morphology by Sex in the AIS Group

	No. (%)				Total No.
	Type A	Type B	Type C	Type D	
Female	1727 (74.7)	426 (18.4)	98 (4.2)	61 (2.6)	2312
Upper thoracic	463 (56.7)	239 (29.3)	64 (7.8)	50 (6.1)	816
Main thoracic	474 (69.7)	168 (24.7)	29 (4.3)	9 (1.3)	680
Thoracolumbar	256 (94.1)	12 (4.4)	2 (0.7)	2 (0.7)	272
Lumbar	534 (98.2)	7 (1.3)	3 (0.6)	0 (0.0)	544
Male	702 (89.8)	47 (6.0)	22 (2.8)	11 (1.4)	782
Upper thoracic	224 (81.2)	28 (10.1)	14 (5.1)	10 (3.6)	276
Main thoracic	202 (87.8)	19 (8.3)	8 (3.5)	1 (0.4)	230
Thoracolumbar	92 (100)	0 (0.0)	0 (0.0)	0 (0.0)	92
Lumbar	184 (100)	0 (0.0)	0 (0.0)	0 (0.0)	184
Total no.	2429	473	120	72	3094

TABLE E-3 Assessment of Pedicle Screw Placement in Normal and Abnormal Pedicles

	Properly Placed Screws*	Misplaced Screws (Medial, Lateral, and Anterior)*	No. of Uninstrumented	Total No.
Normal (Type A)	864 (93)	68 (7)	60	992
Abnormal (Types B, C, D)	266 (79)	69 (21)	57	392
Total	1130 (89)	137 (11)	117	1384

*Values are presented as the number of pedicles with the percentage of pedicles with screws in parentheses.

TABLE E-4 Distribution of Screw Placement in AIS Group

	Type A		Type B		Type C		Type D	
	No.	%	No.	%	No.	%	No.	%
Thoracic								
Normal placement	469	81.7	190	72.5	40	62.5	23	46.0
Anterior placement	17	3.0	11	4.2	3	4.7	5	10.0
Lateral placement	31	5.4	28	10.7	6	9.4	9	18.0
Medial placement	5	0.9	4	1.5	1	1.6	1	2.0
Skipped	52	9.1	29	11.1	14	21.9	12	24.0
Lumbar								
Normal placement	395	94.5	8	88.9	4	80.0	1	50.0
Anterior placement	2	0.5	0	0.0	0	0.0	0	0.0
Lateral placement	9	2.2	0	0.0	0	0.0	1	50.0
Medial placement	4	1.0	0	0.0	0	0.0	0	0.0
Skipped	8	2.0	1	11.1	1	20.0	0	0.0

TABLE E-5 Analysis of the Risk of Abnormal Pedicles by Sex in Patients with and without Deformity

	Abnormal*	Normal*	Odds Ratio (95% CI)	P Value
Control group				
A vs. B, C, D	31F/19M	11F/34M	0.198 (0.082-0.480)	<0.001†
A, B vs. C, D	19F/4M	23F/49M	0.099 (0.031-0.314)	<0.001†
AIS group				
A vs. B, C, D	67F/18M	1F/5M	0.054 (0.006-0.489)	0.004†
A, B vs. C, D	50F/10M	18F/13M	0.277 (0.103-0.741)	0.012†
*F = female, and M = male. †Denotes significance.				