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Operative treatment of severe Scoliosis with Modified Arc Rotation Maneuver

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Statement of the Problem: Description of correction of severe Scoliosis with modified Cantilever bending technique without Anterior Discectomy or Osteotomy.

Methodology & Theoretical Orientation: Ponte, PSO and VCR type posterior osteotomies are often required for the treatment of rigid deformations above 55°. The classic Cantilever maneuver was described by Kao-Wha Chang in 2003. In this study, we will discuss the correction of severe scoliosis with modified Cantilever bending technique without Anterior Discectomy or Osteotomy.

Findings: The technique was performed in 24 patients. 2 of them were male and 22 were female. The age of the patients was 12-32; the severity of deformity was 57°-120°. 1 or 1.5 years of outcomes are present.

Conclusion & Significance: The degree of major curvature was $82.78^\circ \pm 19.89^\circ$ (min. 57°, max. 120°). In order to measure the flexibility of the curves, bending graphs were determined and an average of $21.58^\circ \pm 14.46^\circ$ (% 26.10 ± % 13.69; minimum 2.0°, maximum 40.1°) was detected. This means as the all curves were rigid and severe curves in the patients (t: 2.01; p> 0.05). On the other hand, mean postoperative correction of the major curves was $50.08^\circ \pm 13.23^\circ$ (% 60.49 ± % 14.14; minimum 33.5°, maximum 82.3°) with statistically significance (t:14.85; p<0.01). Postoperative correction percentages were higher than the correction of the curves in the bending graphics with statistically significance (t: -15.42; p< 0.01) Operations were performed without neuromonitorization; none of the patients had neurological complications. No clinical signs were observed in follow ups. Thoracoplasty was not performed in any patient and there was no patient complaint requiring thoracoplasty. During the operation, only facetectomies were used, and neither anterior release nor posterior vertebral osteotomies were performed.

Table 1. Indicative statistics

Mean ± SD*		Range
Age	12 - 32	19,04 ± 5,62
Cobb Angle	57° - 120°	82,78° ± 19,89°
Flexibility (Degree)	2° - 40,1°	21,58° ± 14,46°
t	-	2,01
p	-	> 0,05
Correction (Degree)	33° - 82°	50,08° ± 13,23°
t	-	14,85
p	-	< 0,01
% FLEX, **	-	% 26,10 ± % 13,69
% COR,***	-	% 60,49 ± % 14,14
t	-	-15,42
p	-	< 0,01 .

Biography

Togrul Caliliov was born in Baku city, on May 30, 1981. He finished higher school in 1988 with distinguished certificate and at the same year, he admitted to the Faculty of "Treatment Prevention" of Azerbaijan Medical Institute. He graduated the Institute in 2004 with distinguished diploma and passed the internship at the Scientific Research Institute of Orthopedics and Traumatology of Azerbaijan in 2005. He defended dissertation of PhD on the topic of "Surgical Treatment of Scoliosis with distracting and frontal extending end correctors" on March 18, 2015. Togrul Caliliov. showed himself as skillful and careful doctor during his activity. He is the author of 59 scientific articles, 5 effective proposal, and 5 invention patents. And he continued his research in discovering the operative treatment of Adolescent Idiopathic Scoliosis to get a Doctor of Science degree. He made over 100 operations in patients with severe form of Adolescent Idiopathic Scoliosis.

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