Effectiveness of anterior vertebral body tethering (VBT) in the treatment of adolescent idiopathic scoliosis. Revision of 27 cases.

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INTRODUCTION: The purpose of this investigation is to prove the effectiveness of Vertebral Body tethering in the treatment of adolescent idiopathic scoliosis (AIS). This surgical technique intends to correct the scoliosis curvature by modulating the growth of the spine and offering a different therapeutic option other than spinal fusion.

METHODS: A descriptive observational retrospective investigation was done studying a cohort of patients where clinical and radiographic data was analyzed in patients with AIS , all data was collected in the period of October 2022 to February 2025. All patients were treated by the same surgeon in two different medical centers. The data of 27 patients with AIS was analyzed, all of which were surgically treated with the VBT technique. To probe the effectiveness of the technique our goal was to achieve a Cobb angle ≤350 and a complication rate below 20%

RESULTS: A total of 27 patients with the diagnosis of AIS were included with a mean age of 13.2 years at the time of surgery of which 88.8% where females. The average Risser scale was of 2.6 and Sanders scale was 6.2. The average Cobb angle prior to surgery was 50.2°, and post-surgical Cobb angle was 26.4°. Complication rate was of 7.41% involving one patient with hemothorax and another patient that later needed conversion to spinal fusion.

DISCUSSION AND CONCLUSION:

Patients with AIS treated with the VBT technique were associated with a favorable correction of the deformity and a low complication rate proving this to be an effective and safe technique for the treatment of AIS. To this date this is the only study to present results using this surgical techinique in the Dominican Republic.

Table 1. Patient Demographics

Number of patients	27
Percentage of females	24 (88.8%)
Mean age at the time of surgery	13.2
Age range	7-19 years
Mean Risser scale average	2.6(0-5)
Mean Sanders scale average	6.2 (3-8)
Tether location	
Thoracic spine	16 (59.2 %)
Thoracolumbar spine	8 (29.6%)
Combined	3 (11.1%)
Mean intraoperative	
blood loss	50-100cc (75cc)

Table 2. Mean Cobb angle

	Pre-op	post op	1st Year
Cobb angle	41°-64°	26.4°	17.2°

Figure 1.