Titre: Title:	3D radiological outcomes for patients with moderate idiopathic scoliosis curves treated with internal (anterior vertebral growth modulation) vs external bracing: 2 years observational study
Auteurs: Authors:	Stefan Parent, Matias Pereira Duarte, Carl-Éric Aubin, Nikita Cobetto, Marjolaine Roy-Beaudry, Christian Bellefleur, Isabelle Turgeon, Hubert Labelle, & Soraya Barchi
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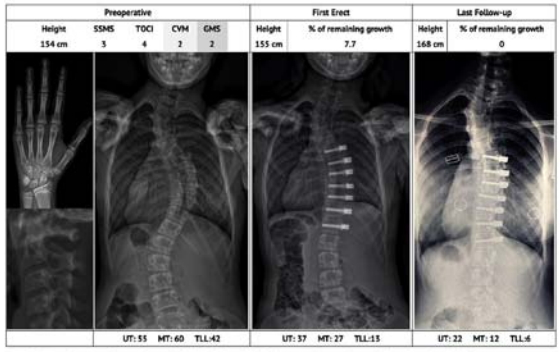
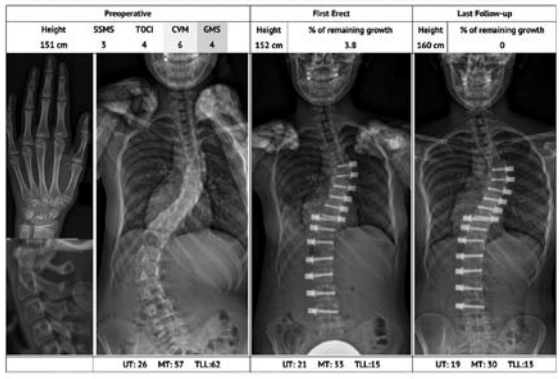
both appendicular and axial skeleton markers, resulted in best growth modulation prediction offering a better clinical judgment of initial surgical correction and estimation of follow-up curve behavior after VBT surgery. External validation of the GMS in larger cohorts is warranted.

	Longitudinal Growth Prediction, R^2	Growth Modulation Prediction, R^2
Risser	38.1	47.2
SSMS: Sanders Simplified Skeletal Maturity Staging	82.4	67.6
TOCI: Thumb-Ossification Composite Index	83.2	62.6
CVM: Cervical Vertebral Maturity	81.1	74.6
CHMS: Combined Hand Maturity Scale (SSMS + TOCI)	87.2	64.9
GMS: Growth Modulation Scale (SSMS + TOCI + CVM)	81.0	82.3



Patient 1: Sanders 3 and GMS 2, had 7.7% growth and modulation in all three curves



Patient 2: Sanders 3 but GMS 4, although had 3.8% growth, displayed no significant modulation.

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35

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3D RADIOLOGICAL OUTCOMES FOR PATIENTS WITH MODERATE IDIOPATHIC SCOLIOSIS CURVES TREATED WITH INTERNAL (ANTERIOR VERTEBRAL GROWTH MODULATION) VS EXTERNAL BRACING: 2 YEARS OBSERVATIONAL STUDY

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Background/Introduction: For idiopathic scoliosis (IS), bracing has demonstrated 72% success in preventing curve progression in patients with 20-40° curves. AVBGM aims to gradually correct scoliosis while preserving spine motion in skeletally immature patients with 30-65° progressive curves and significant growth potential. Although indications for each treatment are clear, in clinical practice there exists a grey area between these options. The relative 3D deformity control performance over a 2-years period between these fusionless treatments is still uncertain.

Purpose of the study: The aim of this study is to analyze 3D morphological parameters modifications at a two years follow-up period for patients with moderate range idiopathic scoliosis curves (30-50°) after bracing and Anterior Vertebral Body Growth Modulation (AVBGM) treatments.

Hypothesis: AVBGM achieves 3D deformity correction after 2-years follow-up while brace treatment limits curve progression for moderate idiopathic scoliosis.

Design: Observational Cohort study.

Methods: A retrospective review of a prospective IS patients' database, recruited between 2013 and 2018 was performed. Inclusion criteria were skeletally immature patients (Risser 0-2), with Cobb angles between 30-50° and a 2-year follow-up after bracing or AVBGM. 3D radiological parameters were evaluated. Unpaired t-test was used.

Results: 39 patients (12.7 y.o. ±1.3) with Cobb angles ≥30° treated with brace and 41 patients (11.8 y.o. ±1.2) with Cobb angles ≤50° who received AVBGM were reviewed. 3D deformity measurements statistical analysis showed that at 2-year follow-up, only the 3D spine length and apical vertebral heights changed significantly with brace treatment. On the other hand, AVBGM treatment achieved statistically significant correction differences in thoracic and lumbar Cobb angles, TrueKyphosis (segmental derotated kyphosis of T5-T12), 3D spine length and selective left apical vertebra height ($p<0.0005$) (table). 35% of brace patients had a curve progression of >5° at final follow-up while it was 0% for AVBGM.

Conclusion: Even though these 2 cohorts are not fully comparable, bracing seems to control progression for a significant portion of patients with moderate scoliosis curves, while AVBGM significantly corrected and maintained 3D deformity parameters at 2-year follow-up.

Table - Tridimensional measurements

	Brace Group					AVBGM Group				
	First Visit		2 years F-up		P	PreOP		PostOp 2 years F-up		P
3D Parameters	Mean	SD	Mean	SD		Mean	SD	Mean	SD	
Thoracic Cobb angle (°)	33,4	6,8	31,2	13,0	0,697	44,8	5,4	18,8	10,7	0,000
Lumbar Cobb angle (°)	29,8	8,6	25,6	12,5	0,086	27,4	12,5	17,3	9,8	0,000
Thoracic Cobb in the Plane of Max. Curvature (°)	40,1	5,9	39,6	9,5	0,683	47,0	6,5	25,3	13,5	0,000
Lumbar Cobb in the Plane of Max. Curvature (°)	41,2	10,2	41,3	14,9	0,688	53,3	12,2	43,4	18,1	0,000
Kyphosis T1-T12 (°)	31,7	11,0	30,4	10,8	0,374	23,1	14,3	27,1	15,8	0,109
True Kyphosis (T5-T12) (°)	17,0	10,5	15,4	12,0	0,477	4,3	11,1	14,1	15,1	0,000
Lordosis L1-S1 (°)	-44,6	8,6	-42,8	8,0	0,090	-42,4	9,2	-42,2	10,9	0,899
Apical Vertebral Rotation (°)	7,9	4,0	7,7	5,0	0,795	8,1	2,9	6,9	5,7	0,183
Pelvic Insidence (°)	54,8	11,8	54,1	11,9	0,486	54,4	12,0	53,6	11,1	0,588
Plumbline T1 - S (mm)	39,3	17,6	37,2	20,1	0,566	32,6	18,8	36,1	17,5	0,228
3D Lenght (T1-S1) (mm)	401,4	26,9	436,3	19,0	0,000	399,5	31,3	430,4	23,3	0,000
Apical Vertebral Right Height (mm)	19,5	2,7	21,3	3,1	0,000	18,5	1,7	18,8	1,8	0,306
Apical Vertebral Left Height (mm)	19,3	3,9	21,2	4,2	0,000	15,5	1,3	17,6	1,6	0,000

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Thursday, 7 October 2021, 16:15–17:15

Best of Session: Presentation of the highest rates abstracts

36

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LOCAL RETROPHARYNGEAL SPACE ANESTHETIC FOR DYSPHAGIA REDUCTION AFTER ANTERIOR CERVICAL DISCECTOMY AND FUSION SURGERY: A SINGLE-CENTER, PROSPECTIVE, RANDOMIZED, DOUBLE-BLINDED, PLACEBO-CONTROLLED CLINICAL TRIAL

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Introduction: We hypothesized that a local anesthetic, bupivacaine hydrochloride, may facilitate the sympathetic blockade of the intraoperative stimulation and therefore reduce postoperative inflammation and swelling of the esophago-pharyngeal area.

Objective: The main objective of this study was to analyze the ability of local anesthetic instillation into the retropharyngeal space to reduce dysphagia symptoms and occurrence rates in patients undergoing anterior cervical discectomy and fusion (ACDF) procedures.

Methods: A single-center, prospective, randomized, double-blinded, and placebo-controlled clinical study was performed. We enrolled patients undergoing one- or two-level ACDF procedures for cervical degenerative disc disease with disc herniation, radiculopathy and/or myelopathy symptoms. The patients were randomly assigned (1:1 ratio) to receive either 0.5% bupivacaine hydrochloride