

4th International Conference on

Orthopedics & Rheumatology

October 26-28, 2015 Baltimore, Maryland, USA

The effectiveness of physical therapy scoliosis specific exercises - Based on the principle of schroth method and bracing to improve curve correction in idiopathic scoliosis within less than one year from diagnosis: A case report

Hagit Berdishevsky

Columbia University Medical Center, USA

Background: Both the Barcelona Scoliosis Physical Therapy School (BSPTS)/Schroth Method and the Wood Cheneau Rigo (WCR) brace focus on the individual curvature pattern by applying 3D corrections according to the original Schroth curve classification and Dr. Rigo Manuel's new classification with particular attention to the following principles: 1. Axial elongation (deflexion and derotation), 2. Asymmetric sagittal straightening, 3. Frontal plane corrections, 4. Rotational/corrective breathing, 5. Muscle activation. The aim of this study was to examine the efficacy of both the WRC brace and the BSPTS/Schroth method on two adolescent girls with AIS.

Case Description: Two girls, T and K, both age 15 now, diagnosed with adolescent idiopathic scoliosis (AIS), T in 2012 with 45° Thoracic and 30° lumbar and K in 2013 with 51° Thoracic and 37° lumbar. Schroth classification: T with 3C and K with 4C. No pain reported on initial evaluation with the therapist. Physical therapy using the BSPTS/Schroth method and WRC brace initiated within a month of diagnosis.

Method: Average of ten months of outpatient physical therapy. Regimen included BSPTS/Schroth-based exercises and trunk mobilizations. 1-2x/week, 1 hour each session. Home exercise program (HEP), 30 min/day 5 days/week, WRC brace 23 hours/day, Exercise equipment included wall bar, physioball, passive corrections 'rice' bags, poles.

Results: By the conclusion of the ten-month treatment period, the patients had experienced significant and measurable improvement. T had decreased Cobb angle to 39° Thoracic and 24° lumbar and K had decreased Cobb to 39° Thoracic and 20° lumbar. Both girls have shown improved trunk stability and strength. Back musculature definition can be seen although wearing the brace for 23 hours/day.

Conclusion: These patients improved both their clinical presentation and radiological measurements. This study suggests that a managed BSPTS/Schroth therapeutic program along with bracing in an outpatient setting with a comprehensive home program of 30 minutes a day was able to improve curve magnitude and clinical appearance in two adolescent female patients with AIS.

Consent: Written informed consent was obtained from the patient's parent for treatment, photos, and publication of this case study.

hagitberdi@gmail.com

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