Scoliosis

ORAL PRESENTATION Open Access

A long-lever spinal orthosis for idiopathic scoliosis: corrective potential in 10 patients

Brian Dovorany*, Mark Morningstar

From 10th International Conference on Conservative Management of Spinal Deformities - SOSORT 2013 Annual Meeting
Chicago, IL, USA. 8-11 May 2013

Background

The long-lever orthosis was designed to treat large translational displacements associated with idiopathic scoliosis. Adding a long-lever system allows the practitioner to affect the spine with a relatively low amount of force, while changing the rotational displacement of scoliosis based upon its effect on the thoracic cage.

Purpose

The goal of this study was to determine whether a novel long-lever orthosis has the ability to positively impact idiopathic scoliosis.

Methods

A sample of 10 patients, ranging in age from 11 to 16 years, with adolescent idiopathic scoliosis presented to a private chiropractic clinic for evaluation and management. All 10 patients had double major scoliosis curve patterns and were fitted for a long-lever orthosis system. Once in place, scoliosis radiographs were obtained while wearing the orthoses. Outcome measurements included Cobb angle and rotational displacement

Results

The average baseline Cobb angles were 51° thoracic (range 39-76°) and 31° lumbar (range 23-41°). While wearing the long-lever orthosis system, the thoracic and lumbar Cobb angles decreased to an average of 28° and 27°, respectively. In five of the patients tested, additional improvement in thoracic rotation was observed, by an average of 52% (range 12-97%). No patient tested had an increase in curves or rotation while wearing the long-lever orthosis system.

Conclusions and discussion

While wearing a specialized long-lever orthosis system, patients saw their Cobb angles and thoracic rotation decrease. This orthosis may help complement exercise-based scoliosis rehabilitation programs for patients with large translational displacements of the thoracic spine.

Published: 18 September 2013

References

1. Gabrielle C Lam, Doug L Hill, Lawrence H Le, Jim V Raso, Edmond H Lou: **Vertebral rotation measurement: a summary and comparison of common radiographic and CT methods.** *Scoliosis* 2008, **3**:16.
2. Stokes IAF: **Axial rotation component of thoracic scoliosis.** *J. Orthop. Res* 1989, **7**:702-708.

doi:10.1186/1748-7161-8-S2-O53
Cite this article as: Dovorany and Morningstar: A long-lever spinal orthosis for idiopathic scoliosis: corrective potential in 10 patients. *Scoliosis* 2013 **8**(Suppl 2):O53.

* Correspondence: drdovorany@treatingscoliosis.com
Spine & Posture Center, Green Bay, WI USA