

POSTER PRESENTATION

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Case report: AID, a new principle of correction to treat proximal structural curve with a brace

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Background

There is no wide accepted principle to brace primary thoracic double major and triple structural curve patterns. Axial elongation from a super-structure or three-point system with a neck semi-ring are some of the previously proposed principles.

Aim

The purpose of this case report is to present a new principle of correction based on axial compression on the convex ribs of the proximal curve.

Case report

A 14 year old was diagnosed with AIS at 10 years of age. In a first X-ray from February 2010 it was noted a right thoracic curve measuring 7° Cobb, combined with a left lumbar measuring 7° Cobb. Proximal thoracic region was not measurable. One year later, February 2011 the Cobb angles progressed to 18° and 13° respectively, and progression was confirmed on September 2011 with a Cobb angle of 24° in the main thoracic and 26° in the lumbar curve. She was treated with a Boston brace showing poor in-brace correction, with 17° lumbar, 22° main thoracic and 19° proximal curves. In a new X-ray out of brace on May 2012 the angles were 19°, 18° and 21°. With her second Boston brace the values were 19°, 18° and 25° respectively. On December 2012 and with no new reference out-brace the brace was changed to a classical Chêneau type brace, with no in-brace X-ray, mainly due to the over-exposition. Menarche on April 2013. New X-ray on June showed a progression to 21°, 25° and 31° respectively. Due to the bad evolution of the proximal curve we designed a removable superstructure with a combined mechanism: compression on the convex proximal curve and three-point

system. After using partial time this super-structure and confirming an acceptable in-brace correction of the proximal curve, her last X-ray on January 2014 showed a stable curve 21°, 27° and 30° respectively, at Risser 3-.

Discussion

A new principle of correction applicable to the proximal structural curve in thoracic double major and triple structural curves is presented in a single case report. Further research is necessary before to make any conclusion.

Consent

Written informed consent was obtained from the parents/legal guardian of the patient for publication of this Case report. A copy of the written consent is available for review by the Editor of this journal.

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