Successful brace treatment in infantile /juvenile patients is possible – an example of a patient with progressive scoliosis due to Marfan’s syndrome

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SUMMARY
Infantile or juvenile curvatures exceeding 40° usually are regarded as an urgent indication for spine surgery. An infantile patient with Marfan’s syndrome and a curvature of 50° at the start of treatment is documented here showing that curve reduction is possible even in patients with curvatures exceeding 40° in this age group without spinal surgery. Therefore bracing with proven high quality approaches should be used before surgery is considered.

Little information exists about successful brace treatment of progressive early onset scoliosis. Even less information is available about the early treatment of scoliosis patients with Marfan’s syndrome at age < 6 years. Purpose of this case report is to demonstrate the possibility of successful brace treatment in a patient with early onset scoliosis due to Marfan’s syndrome.

Case presentation: A two year old girl diagnosed with Marfan’s syndrome presented with a double major scoliosis of 20° first. After a follow-up of 6 months she showed a rapid progression to 46° (November 2008) and was braced immediately and at the time of bracing already had 50° Cobb.

In-brace correction in the first brace was moderate due to the stiffness mainly of the lumbar curve. A new brace was made after significant growth (Gensingen brace in October 2009), when the curve already had been reduced to 36° Cobb. An in-brace correction to 12° thoracic and 12° lumbar has been achieved. In October 2010 she also had outgrown her second brace to some extent. Due to clinical overcorrection (ATR lumbar -5°) brace wearing time has been reduced to 12 hrs. / day at first. In January 2011 at the age of 4 and a half she presented again with an ATR lumbar of -6° still overcorrected, so we decided to leave off the brace for another 3 months. The deformity returned and we had to make a new brace in April 2011. For brace construction a new x-ray has been made showing the curve meanwhile has been reduced to 24° Cobb, however still with significant wedging of the apical vertebra.

Conclusions: (1) Successful brace treatment in infantile / juvenile patients with scoliosis is possible. (2) When treated during periods of rapid growth corrections can be achieved with high correction braces. (3) Before early surgery is performed high quality conservative management seems indicated. (4) All this has been achieved without any physiotherapy, so bracing should be considered to be more beneficial than physiotherapy.

Fig. 1. Follow-up of the patient with 50° at the age of 2 years, 36° at the age of 3 years and 24° at the age of nearly 5 years when finishing the first big growth spurt.

Fig. 2. Correction effect of the second brace ( 36° to 12° in the brace).

Fig. 3. Brace treatment has taken place during a phase of significant growth dynamics with high risk of progression (purple bar).