

136. Idiopathic Scoliosis Patients with Curves over 45 Cobb Degrees Refusing Surgery Can Be Effectively Treated through Bracing with Curve Improvements

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BACKGROUND CONTEXT: It is a broad consensus today that scoliosis curves can't be improved through bracing and the Scoliosis Research Society (SRS) methodological criteria for bracing have the avoidance of progression as their only objective. Consequently, in curves over 45° fusion is considered as basically the only possible treatment.

PURPOSE: The purpose of the study was to verify in a series of patients who utterly refuse surgery, if it is possible to achieve improvements of scoliosis over 45° through a complete, conservative treatment (bracing and exercises).

STUDY DESIGN/SETTING: Retrospective case series on a prospective database.

PATIENT SAMPLE: The sample comprised 28 idiopathic scoliosis patients over ten years of age, still growing, with at least one curve above 45°, who had continually refused fusion. The group comprised 24 females and four males, including 14 in which previous brace treatments had failed; at the start, age 14.2±1.8, and Cobb degrees 49.4 (range 45–58°). Subgroups considered were gender, bone age, type of scoliosis, treatment used and previous failed treatment.

OUTCOME MEASURES: Self-report measurements: SRS-22; physiological measures: Cobb degrees, Bunnel ATR, Aesthetic Index and sagittal plumb-line distances.

METHODS: The methods comprised full-time treatment (23 or 24 hours per day) for one year with Risser cast (14) or Lyon or Sforzesco brace (14); weaning of one to two hours every six months; with strategies to maximize compliance through the Society on Scoliosis Orthopaedic and Rehabilitation Treatment (SOSORT) management criteria applied and specific SEAS exercises performed.

RESULTS: Reported compliance in the 4.10±1.2 treatment years was 94%, with satisfaction regarding treatment and excellent results at the SRS-22. Two patients (7%) remained above 50°, but six (21%) finished between 30° and 35° and 12 (43%) finished between 36° and 40°. Improvements have been found in 71% of patients and a 5° progression in one patient. Statistically, we found highly significant reductions of the main curves (-9.25°), average (-6.6°), thoracic (-7.8°) and lumbar (-15.9°) curves. Statistically significant improvements have been found for the Aesthetic Index and ATR, with a general decrease in plumb-line distances.

CONCLUSIONS: Bracing can be successfully used in patients who don't want to receive operations for idiopathic scoliosis with curves ranging between 45° and 60° Cobb, given sufficient clinical expertise to apply good braces and achieve great compliance. Future studies could demonstrate the percentages at which this result can be achieved.

FDA DEVICE/DRUG STATUS: This abstract does not discuss or include any applicable devices or drugs.

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