

Oral presentation

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Long-term outcome after Boston brace treatment in adolescent idiopathic scoliosis

JE Lange, H Steen and JI Brox*

Address: Orthopaedic Dept. Rikshospitalet University Hospital, N-0027 Oslo, Norway

Email: JI Brox* - jens.ivar.brox@rikshospitalet.no

* Corresponding author

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Objectives

The objective of this study was to evaluate the long-term outcome in adolescent idiopathic scoliosis (AIS) 12 years or more after treatment with the Boston brace.

Background

Few studies have evaluated long-term outcome after bracing by using validated quality of life outcomes.

Materials and methods

110 (78%) of 140 (7 men) patients with AIS treated with the Boston brace 12-28 years previously responded to a long-term follow-up examination. Patients were evaluated either by clinical and radiological examination (n = 66), postal questionnaire, or telephone interview. All patients answered a standardized questionnaire including demographics, work status, treatment, Oswestry Disability Index (ODI) (100-worst possible), General Function Score (GFS) (100- worst possible), EuroQol (EQ-5D (1 - best possible), EQ-VAS (100- best possible)) and Scoliosis Research Society -22 (SRS-22) (5 - best possible).

Results

The mean magnitude of the pre-treatment major curve was 33.2° (range 20° - 52°) (n = 110). Upon ending bracing treatment after an mean of 2.9 years (0.5 - 9.3 years), and at the last follow-up, a mean of 19.8 years (12 - 28 years) after weaning, the corresponding values were 28.5° (9° -56°) (n = 110), and 34.0° (8° - 87°) (n = 66) respectively. Even if the average progression of the major curve

after weaning was 5.5° (-7° - 44°), the long time follow-up compared with the pre-treatment value was -0.6° (-21° - 36°) (n = 66). The mean age at follow-up was 36 years (29- 46 years). Work status was the following: full time (80%), on sick-leave (3%), on rehabilitation (4%), disability pension (4%), homemaker (7%), students (2%), changed job because of back pain (7%). 58% were educated at the university level, 77% were married or living together, 88% had children, 55% had pain in pregnancy. 28% had taken physiotherapy for back pain during the last year, and 12% had visited a doctor. Global back status was excellent or good in 81%. Mean ODI 6.4 (SD 9.8), mean GFS 5.4 (10.5), mean EQ-5D 0.84 (0.2), SRS-pain 4.2 (0.8), SRS-mental health 4.2 (0.7), SRS-self-image 3.9 (0.7), SRS-function 4.1 (0.6), SRS-satisfaction with treatment 3.7 (1.0).

Conclusion

Long-term results were satisfactory in most patients with AIS treated with the Boston brace.