Spinal deformity and malocclusion association is not supported by high-quality studies: results from a systematic review of the literature.


Erratum in
Correction to: Spinal deformity and malocclusion association is not supported by high-quality studies: results from a systematic review of the literature. [Eur Spine J. 2019]

Abstract
BACKGROUND: Several reports in the literature have suggested a causative association between oral occlusion and spinal deformity such as scoliosis and Scheuermann's disease or kyphosis. Based on these findings, a growing number of adolescents with spinal deformity receive orthodontic treatment, supposing a beneficial effect on the spine.

OBJECTIVE: The aim of this study was to verify the association between spinal deformity and malocclusion in the orthopedic population and potential effect of orthodontic treatment on the spinal deformity.

METHOD: The databases: MEDLINE, CINAHL, EMBASE, Cochrane Register, OTseeker and ScienceDirect were searched up to August 2017 for studies reporting on associations between spinal and occlusal conditions. Case series, cohort, case-control studies and randomized clinical trials were considered for analysis. Two reviewers independently selected studies, conducted quality assessment and extracted results. Methodological quality was assessed using MINORS score.

RESULTS: Nine publications reporting on 1424 patients were included. Studies were two case series, five case-control studies, one cohort study and one randomized clinical trial. The methodological quality was poor in 8/9 studies.

CONCLUSION: Evidence from three low-quality studies suggests an increased prevalence of occlusal dysfunction in patients with known spinal deformity, but the conclusions have a high risk of bias. No evidence of beneficial effects of orthodontic treatment on spinal deformity was found. These slides can be retrieved under Electronic Supplementary Material.

KEYWORDS: Dental occlusion; Kyphosis; Mandibular malocclusion; Scheuermann’s disease; Scoliosis; Spine deformity; Systematic review; Temporomandibular joint

PMID: 30673874 DOI: 10.1007/s00586-019-05896-4

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