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Title: Impact of force duration and magnitude on the effectiveness of cervical headgear therapy- a controlled clinical trial

Abstract:

Aim: To study impact of different force magnitudes on effectiveness in cervical headgear (CHG) therapy.
Materials and methods: Forty patients were treated with a light (300 g) or a heavy (500 g) force magnitude in CHG and were asked to wear for 10 hours/day for 10 months. Adherence to instructions and force magnitude was monitored with an electronic module (Smartgear, Swissorthodontics, Switzerland). Panoramic, lateral radiographs and study models before and after treatment were analysed digitally (Romexis, Planmeca, Finland).
Results: Force magnitude in CHG therapy can be set at certain level, light or heavy, but not at certain amount; force magnitude fluctuates all the time during the use probably due to changing head posture. With light force in CHG adherence to instructions was better than with heavy force. According to the cephalometric analysis in both groups was achieved dental and skeletal effects, with great individual variability; displacement of the maxilla was restricted and the upper molars moved in a distal direction; outcome was same in both groups. However, with heavy force the outcome was achieved with less daily hours. In both groups was achieved widening and lengthening in the upper dental arch and up to moderate crowding can be released with gained space. The lower dental arch followed the upper arch spontaneously, albeit effects were minor. With heavy force in CHG the upper first and second molars can tilt more easily in the distal direction.

Conclusion: Light force (300 g) is recommended for use in the cervical headgear therapy.

Biography

Tuula Talvitie has been working as a specialist in orthodontics in the University Hospital of Tampere and Hospital District of South Ostrobotnia for a decade and simultaneously in municipal health center in Vaasa. She has clinical experience over 10 years as a specialist in orthodontics and as a supervisor for post graduate students.