



CFAO GRADUATE STUDENT POSTERBOARD ABSTRACTS

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Predictors of long-term stability of mandibular dental arch dimensions in patients treated with a lip bumper during mixed dentition followed by fixed appliances

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Background: This retrospective study aimed to identify which dental and/or cephalometric variables were predictors of long-term mandibular dental arch stability in patients that underwent treatment with transpalatal arch and lip bumper during mixed dentition followed by full fixed appliances in the permanent dentition.

Methods: Thirty-one patients were divided into stable and relapse groups based on the long-term presence or not of relapse. Intercuspid, interpremolar and intermolar widths, arch length and perimeter, crowding and lower incisor proclination were evaluated before treatment (T0), post-lip bumper treatment (T1), post-fixed appliance treatment (T2), and a minimum of 3 years after full fixed appliances' removal (T3). Logistic regression analyses were performed to evaluate the effect of changes between T0 and T1, as predictive variables, on the occurrence of relapse at T3.

Results: The model explained 53.5% of the variance in treatment stability and correctly classified 80.6 % of the sample. Of the seven prediction variables, intermolar and interpremolar changes between T0 and T1 ($p=0.024$ and $p=0.034$ respectively) were statistically significant. For every millimeter of increase in intermolar and interpremolar widths there was an increase of 1.52 and 2.70 times in the odds of having stability. There was also a weak evidence for the effect of sex ($p= 0.047$).

Conclusions: The best predictors of long-term mandibular dental arch stability after treatment with a lip bumper followed by full fixed appliances were intermolar and interpremolar width increases during lip bumper therapy. The amount of relapse in this crowding could be considered clinically irrelevant.