



EFFECT OF CIRCUMFERENTIAL FIBEROTOMY ON THE STABILITY OF ORTHODONTIC TREATMENT. A RANDOMIZED CONTROLLED CLINICAL TRIAL

Kristin Heimisdottir, Bjarni E. Pjetursson, Sabine Ruf, Niklaus P. Lang

CONCLUSION:

Performing circumferential fiberotomy does not appear to enhance post-orthodontic therapy stability of the lower front teeth and thus, seems not to be justified.

INTRODUCTION:

It has been claimed, that performing a fiberotomy may enhance the stability after orthodontic treatment by up to 30%, especially regarding rotational relapse. However, randomized controlled clinical trials have not been performed to substantiate this claim.

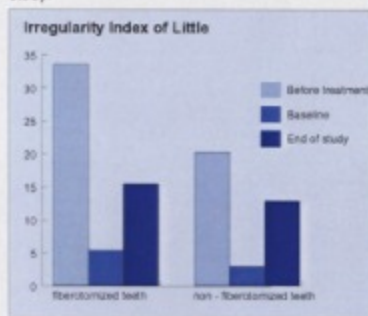
AIM:

The aim of the present study was to evaluate the effect of circumferential fiberotomy on the stability of lower incisor and canine alignment. The null hypothesis was that fiberotomy does not make any difference for alignment stability after orthodontic treatment.

MATERIAL AND METHODS:

Nine consecutively admitted patients from the Department of Orthodontics, University of Bern. The main inclusion criteria were: similar crowding on both sides of the mandible at baseline (more than 3mm), Class II molar relationship and non-extraction treatment with fixed appliances.

At the end of multibracket appliance therapy, the lower arch-wire was removed. A circumferential intrasuticular fiberotomy was performed from the canine to the central incisor on a randomly chosen side (left or right) by an independent practitioner. Evaluations of the changes in tooth position were made after 1, 2, 4 and 6 months. At each evaluation study casts and intra-oral photographs were obtained. The study casts were subsequently analyzed using the Irregularity Index of Little. The study casts were photographed occlusally using a standardized method. The study cast photographs were traced and superimposed (Fig. 1-2). The movement of teeth was registered and analyzed, using a special computer program designed for this study (Fig. 3). As soon as relapse occurred, the arch-wire was reinserted and the patient dismissed from the study.



RESULTS:

There was no significant difference in alignment stability between teeth with fiberotomy compared to non-fiberotomized teeth. These results were documented both by using the Irregularity Index of Little and by superimposing tracings of standardized photographs. In most of the cases, relapse occurred after 2-4 months, necessitating the re-insertion of the arch-wire.

