OP29 A RANDOMIZED CONTROLLED TRIAL ON GINGIVAL INVAGINATIONS

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AIMS: Gingival invaginations are a common side effect related to orthodontic extraction space closure. They present with bone loss, inflammation and jeopardized space closure. In clinical practice, there is considerable variation in the timing of space closure initiation. In this RCT, conducted at two centres in Germany, whether the timing of orthodontic space closure after extraction influenced the incidence and severity of gingival invaginations was examined.

SUBJECTS AND METHOD: Fifty four non-smoking and healthy patients (26 male, 28 female, mean age 14.8 years), with an indication for extraction of a minimum of one premolar were randomly assigned to initiation of space closure 2-4 weeks (A) or >12 weeks (B) after tooth extraction. During and after space closure clinical data (occurence and severity of gingival invaginations, probing depths, progress of space closure, oral hygiene, bleeding on probing etc.) were recorded and transferred to a biometrical institution by special case report forms. The study was conducted under constant surveillance of an independent study control centre.

RESULTS: Seventy four extraction regions (28 in the maxilla, 38 in the mandible) were evaluated. There was no significant differences for the incidence of gingival invaginations (Fisher exact test P = 0.17) (treatment A 37/84.1% with and 7/19% without gingival invaginations versus treatment B 29/96.7% with and 1/3.3% without gingival invaginations). The same was true when comparing the groups within one jaw (upper jaw P = 0.52; lower jaw P = 0.21). Also the degree of severity of gingival invaginations showed no significant differences in the treatment groups.

CONCLUSION: There was no significant effect of timing of the orthodontic space closure on the incidence and severity of formed gingival invaginations. The findings suggest that timely initiation of space closure may contribute to a reduction of treatment time without increasing the occurence and severity of gingival invaginations. With the existing data it may be possible to identify confounding variables, perform case load calculations and plan future clinical trials with smarter designs. Further studies with larger sample sizes are needed to confirm the results.

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