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Application of a new three dimensional method of analysis for comparison between the effects of two different methods of distalization of the maxillary first molar

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Aim: The study was conducted to apply a new three dimensional method of analysis for comparison between the effects of two different methods of distalization of the maxillary first molar.

Materials and Methods: Cone beam computed tomographic radiographs of 20 patients suffering from class II malocclusion were selected from the outpatient clinic data library of Department of Orthodontics, Faculty of Dentistry, Minia University. Half of them had been treated with Carriere distalizer and the other half were treated with the dual force distalizer. The pre and post distalization C.B.CTs were analyzed three dimensionally using the united reference method. Linear and angular measurements for the maxillary first molar and the maxillary canine were taken to evaluate the performance of both distalizers. Loss of anchorage was also evaluated through linear and angular measurements performed for the mandibular first molar and the mandibular central incisor in case of Carriere distalizer while only linear measurements were performed for buccal and palatal screws heads in case of dual force distalizer.

Results: Maxillary first molar distalization, intrusion, distal crown tipping, lingual crown inclination and mesial out molar rotation were assessed among both distalizers. More bodily movement and lesser rotation in usage of dual force distalizer were detected. Loss of anchorage indicated by mesialization and extrusion of mandibular first molar and buccal crown inclination of mandibular central incisor in usage of carrier distalizer and mesial movement of buccal and palatal screws heads in usage of dual force distalizer was observed.

Conclusion: The united reference method is an effective three dimensional evaluation method for treatment progress

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