عنوان مقاله:

Qualitative Description of the Effects of Rapid Maxillary Expansion: A Three-Dimensional Perspective

محل انتشار:

دوفصلنامه ارتودنسی ایران, دوره 13, شماره 1 (سال: 1397)

تعداد صفحات اصل مقاله: 6

نویسندگان:

Luis Huanca Ghislanzoni - *Research Assistant, Department of Orthodontics, University of Geneve, Switzerland and (Private Practice in Albino (Italy) and Lausanne (Switzerland*

Roberta Lione - *Research Assistant, Department of Orthodontics, University of Rome Tor Vergata, Italy and Department of Dentistry UNSBC, Tirana*

Lorenzo Franchi - *Assistant Professor, Department of Surgery and Translational Medicine, University of Florence, Florence, Italy*

Paola Cozza - *۴Professor and Head, Department of Orthodontics, University of Rome Tor Vergata, Italy. Head of the Department of Dentistry UNSBC Tirana*

خلاصه مقاله:

Background The effects of rapid maxillary expansion (RME) have been widely studied with classic bidimensional imaging. Objectives The study aimed to determine immediate post-expansion effect of RME with three-dimensional imaging. Methods Computed tomography (CT) low dose scan records were taken for three patients before applying RME (T۰), and immediately after the end of the active expansion phase (T۱). For one patient a CT scan was available also at T۲, at time of RME removal. Image analysis was done in ۴ steps: segmentation of the face skull, model construction and exportation of .stl surface shells, cranial base superimpositions and colorimetric maps overlay. Results There were differences in the bone adaptations to RME, but it was possible to identify some common trends in the three patients. All of the three patients showed a pattern of forward movement of the maxilla associated to the suture opening. Patients ۱ and ۳ demonstrated also a downward movement of the maxilla, which was not visible on patient ۲. As a sagittal advancement of almost ۶ mm, as visible in patients ۱ and ۳, was not possible due to growth in only two weeks, all bony changes could be attributed to the RME. For patient ۱, the bony changes present at T۱, were still present at T۲, while the suture was closed. Conclusions A pattern of forward immediate displacement of the maxilla with respect to the cranial base was consistently noticed in three patients. The vomer bone maintained a connection with one half of the maxilla when the suture opened.

کلمات کلیدی:

Rapid Maxillary Expansion, Three, Dimensional Imaging, Computed tomography