Finite Element Analysis of An Automated Rapid Maxillary Expander (ARME).

Abstract

An Automated Rapid Maxillary Expander (ARME), is a specially designed orthodontic appliance to overcome the shortcomings imposed by the traditional butterfly expansion appliance. It operates by automatically widening the maxilla (upper jaw) by expanding the midpalatal suture [1]. This procedure is not feasible after late teenage years due to more rigid facial skeleton features. According to the study by Cozzani [2], the activation of the device could produce 0.25 mm of expansion per day. Over the period of 2 weeks, the expansion produced is up to 7 mm in total [1]. For this study, we explored the mechanism involved in the ARME appliance by using Finite Element Modeling method.

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Keyword

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