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## THREE-DIMENSIONAL ANALYSIS OF THE MAXILLARY EXPANSION IN PATIENTS AT THE END OF GROWTH WITH THREE DIFFERENT THERAPEUTIC PROTOCOLS.

This study treats about three-dimensional analysis of maxillary expansion calculated in three different groups of patients, with the aim of analyzing three different therapeutic approaches in patients with advanced skeletal maturation.

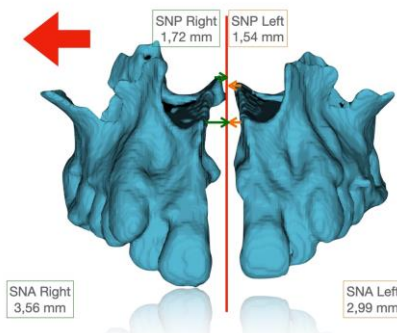
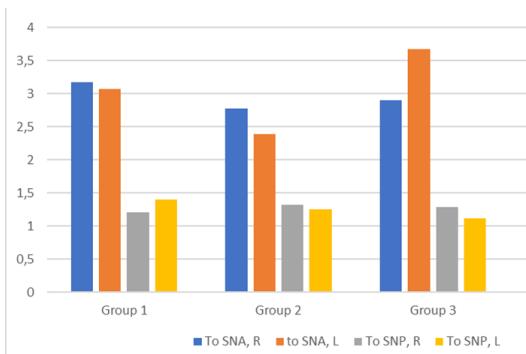
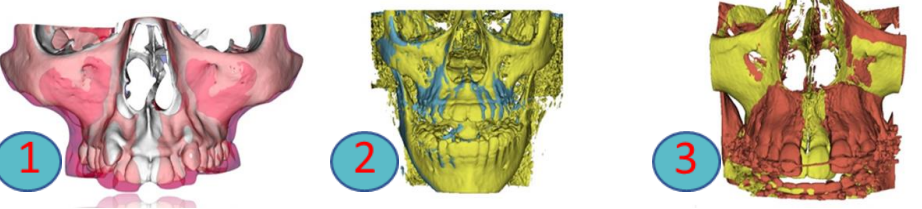
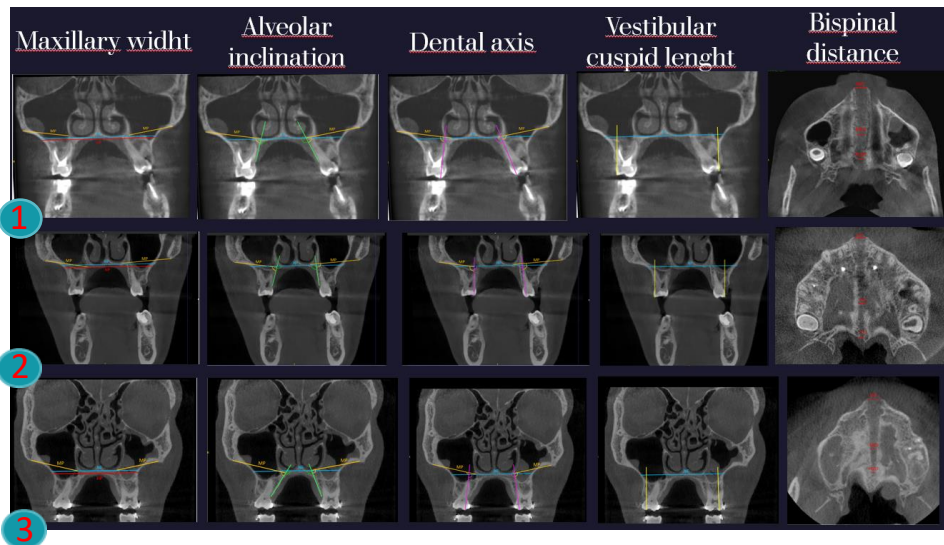


The study includes 15 patients, divided into three groups: the first group was treated with Bone Borne device (1), the second group with Bone Borne devices and corticopuncture using piezosurgery (2), the third group with SARPE (3).

Two CBCTs were acquired for each patient: one at the start of treatment (T0) and one at the end of therapy (T1).

First, specific planes and angles were measured with the ITK-Snap software; subsequently the CBCTs were segmented and superimposed with the 3DSlicer software.

In both steps, different measurements were acquired to compare the various types of expansion and any asymmetries with precision and accuracy.



Significant maxillary expansion was found in the three groups. In particular, it emerged that a greater transverse increase was found at the level of the anterior portion (Group 1: 4.09 + 1.12 mm, Group 2: 4.56 + 0.22 mm and Group 3: 5.97 + 1.25 mm), compared to the lower one (Group 1: 2.68 + 0.67 mm, Group 2: 2.28 + 0.44 mm, Group 3: 2.08 + 0.25). Another relatively important finding that this study brings to light is that all the expansions, turned out to be asymmetrical. The asymmetry was calculated starting from a median line drawn on the CBCT at T0 with respect to the right and left SNA and SNP.