

Sagittal jaw relationship of different types of cleft and non-cleft individuals

ABSTRACT

To investigate whether the craniofacial sagittal jaw relationship in patients with non-syndromic cleft differed from non-cleft (NC) individuals by artificial intelligence (A.I.)-driven lateral cephalometric (Late. Ceph.) analysis. The study group comprised 123 subjects with different types of clefts including 29 = BCLP (bilateral cleft lip and palate), 41 = UCLP (unilateral cleft lip and palate), 9 = UCLA (unilateral cleft lip and alveolus), 13 = UCL (unilateral cleft lip) and NC = 31. The mean age was 14.77 years. SNA, SNB, ANB angle and Wits appraisal was measured in lateral cephalogram using a new innovative A.I driven Webceph software. Two-way ANOVA and multiple-comparison statistics tests were applied to see the differences between gender and among different types of clefts vs. NC individuals. A significant decrease ($p < 0.005$) in SNA, ANB, Wits appraisal was observed in different types of clefts vs. NC individuals. SNB ($p > 0.005$) showed insignificant variables in relation to type of clefts. No significant difference was also found in terms of gender in relation to any type of clefts and NC group. The present study advocates a decrease in sagittal development (SNA, ANB and Wits appraisal) in different types of clefts compared to NC individuals.

Keyword: Sagittal jaw relationship; Cleft lip and palate; Cephalometric analysis; Wits appraisal; SNA angle; SNB angle; ANB angle; Artificial intelligence