

OP45 FACIAL ASYMMETRY EVALUATION IN JUVENILE IDIOPATHIC ARTHRITIS PATIENTS BASED ON CONE-BEAM COMPUTED TOMOGRAPHY AND THREE-DIMENSIONAL PHOTOGRAPHY

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**AIMS:** To assess the degree of and correlation between facial hard and soft tissue asymmetry in patients with juvenile idiopathic arthritis (JIA), identify valid soft tissue points for clinical examination and assess the smallest clinical detectable level of dentofacial asymmetry.

**SUBJECTS AND METHOD:** Twenty-one JIA patients diagnosed according to the ILAR criteria, participated in the study. Full-face cone-beam computed tomography (CBCT) scans and three-dimensional (3D) photographs were used to measure and assess facial hard and soft tissue asymmetry with regression analysis. A survey of 13 postgraduate orthodontic residents and five senior staff members of Aarhus University Section of Orthodontics was also conducted to assess how asymmetry is observationally perceived based on CBCT scans and 3D photographs. Descriptive statistics was applied for the presentation of the survey results.

**RESULTS:** Significant linear correlation was found between the hard and soft tissue gonial deviations at both the transverse and vertical positions ( $R^2 = 0.486$  and  $R^2 = 0.535$ ), while transverse asymmetries of pogonion presented high correlation ( $R^2 = 0.786$ ). The occlusal plane canting and the vertical difference of cheilion were correlated ( $R^2 = 0.349$ ). The occlusal plane canting was also correlated to the vertical asymmetry of the zygomatic processes ( $R^2 = 0.470$ ), while it was found to coincide with vertical hard tissue gonion deviations ( $R^2 = 0.564$ ). Transverse and vertical positions of the soft tissue gonion and cheilion were correlated ( $R^2 = 0.313$  and  $R^2 = 0.446$ ). Among medial soft tissue points, glabella was found to present the smallest deviation and pogonion the largest deviation from the midsagittal plane. The participants' assessment of hard and soft tissue deviations in the survey was found to be in agreement with linear measurements when deviation exceeded  $\pm 2$  mm.

**CONCLUSION:** Facial asymmetries are most pronounced at the lower facial third. Soft tissue pogonion and gonion were identified as the most appropriate landmarks to clinically assess the presence of facial asymmetry. Professionals can accurately identify asymmetry when this exceeds 2 mm.