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Airway adequacy, head posture, and craniofacial morphology.

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Previous studies of different samples have demonstrated associations between craniocervical angulation and craniofacial morphology, between airway obstruction by adenoids and craniofacial morphology, and between airway obstruction and craniocervical angulation. A hypothesis to account for the different sets of associations was suggested by Solow and Kreiborg in 1977. In the present study, the three sets of associations were examined in a single group of nonpathologic subjects with no history of airway obstruction. Cephalometric radiographs taken in the natural head position and rhinomanometric recordings were obtained from twenty-four children 7 to 9 years of age. Correlations were calculated between twenty-seven morphologic, eight postural, and two airway variables. A large craniocervical angle was, on the average, seen in connection with small mandibular dimensions, mandibular retrognathism, and a large mandibular inclination. Obstructed nasopharyngeal airways (defined as a small pm-ad 2 radiographic distance and a large nasal respiratory resistance, NRR, determined rhinomanometrically) were, on the average, seen in connection with a large craniocervical angle and with small mandibular dimensions, mandibular retrognathism, a large mandibular inclination, and retroclination of the upper incisors. The observed correlations were in agreement with the predicted pattern of associations between craniofacial morphology, craniocervical angulation, and airway resistance, thus suggesting the simultaneous presence of such associations in the sample of nonpathologic subjects with no history of airway obstruction.

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