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Mandibular condyle morphology in relation to malocclusions in children

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ABSTRACT

Recent studies show that forces applied to the mandible during treatment with functional appliances and other orthodontic therapies produce changes in the TMJ. Specific malocclusions might also apply forces that can produce changes in the morphology of the TMJ. This study examined 104 orthodontic patients (44 males and 60 females) prior to treatment. The size and location of the condyle was determined on submento-vertex and tomographic films which was related to clinical findings including age, sex, malocclusion type, facial type, TMJ symptoms, tooth eruption sequence, crossbites and midline discrepancies. The medio-lateral width of the condylar head correlated positively with the patients age ($p < 0.001$) and sex ($p < 0.001$). Also the antero-posterior widths of the condyle were correlated with age ($p < 0.05$). The condylar size in males was found to be greater than in females. Midline discrepancy significantly altered the increase in condylar size during growth. Transversal anomalies had a markedly greater influence on condylar growth compared to other characteristics of occlusion. The major change in condylar size during growth occurred in medio-lateral dimension as compared to the antero-posterior. In addition, the medio-lateral width was affected by midline discrepancy but not the antero-posterior width.

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