

OP09 MANDIBULAR INCISOR DENTOALVEOLAR COMPENSATION AMONG CLASS I, II AND III MALOCCLUSION PATIENTS WITH DIFFERENT VERTICAL FACIAL PATTERNS

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AIM: To compare mandibular incisor dentoalveolar compensation and associated mandibular symphysis morphology among Class I, Class II division 1 and Class III malocclusion patients with different facial vertical skeletal patterns.

MATERIALS AND METHOD: Mandibular incisor extrusion and inclination, as well as buccal and lingual symphyseal bony cortex depth, and mandibular symphyseal height were measured on 199 lateral cephalometric radiographs of adult patients without prior orthodontic treatment. Differences between overjet, sagittal and vertical patterns among malocclusion types were contrasted. Through a principal component analysis (PCA) an adaptation pattern for lower incisor behaviour inside its symphyseal environment was identified based on the underlying malocclusion features.

RESULTS: Differences were identified for mandibular incisor inclination and extrusion in Class II division 1 and Class III compared to Class I malocclusions. In all groups, the correlation between mandibular plane angulation increase and dentoalveolar compensations was weak. According to the PCA, in close to 70 per cent of the Class III malocclusion sample, the mandibular symphysis elongates and narrows, especially in subjects with a long face tendency.

CONCLUSION: Dentoalveolar compensation was linked to lower incisor inclination and extrusion in Class I and Class III malocclusions, while in Class II division 1 malocclusions dentoalveolar compensation was not primarily linked to the evaluated cephalometric factors. The vertical facial pattern is a significant influencing factor in mandibular symphysis morphology especially in the long face Class III malocclusion type.