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Evaluation of Oropharyngeal Airway Changes in Skeletal Class II Patients Undergoing Twin Block Appliance Therapy

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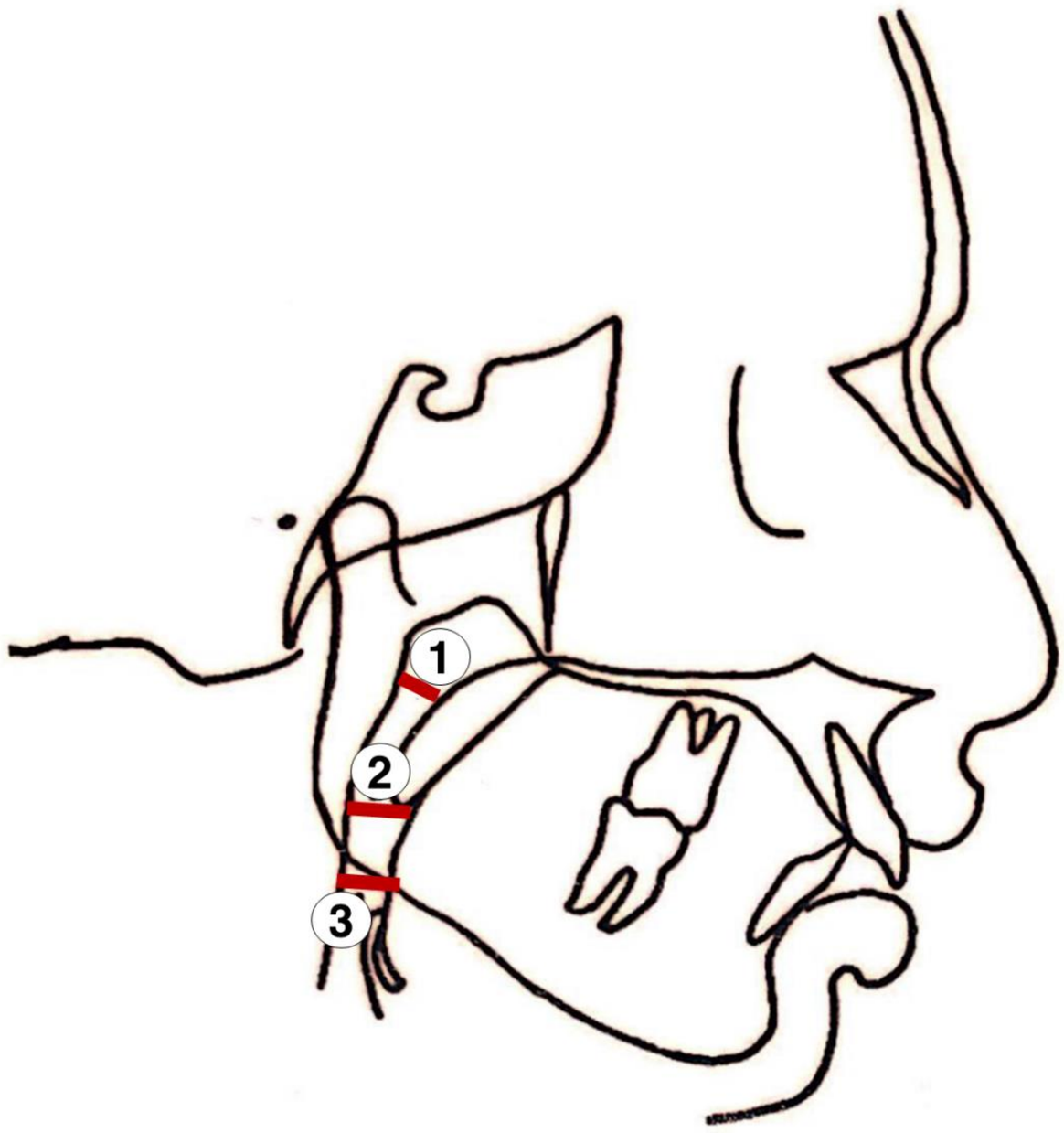
Introduction

Mandibular advancement strategies, such as the Twin Block appliance, have been employed to address airway anomalies in pediatric patients exhibiting skeletal Class II malocclusion with retrognathic mandibles. This study investigated the changes in oropharyngeal airway dimensions in growing patients with retrognathic mandibles and skeletal Class II patterns, treated with the Twin Block functional appliance. We evaluated skeletal changes post-treatment and their relation to airway alterations.

Materials and Methods

20 children with skeletal Class II malocclusion were examined.
At pretreatment stage, all subjects had Angle Class II molar relationship with mandibular retrognathism and an ANB angle exceeding 4 degrees, and an overjet greater than 5mm.
Pre and post-therapeutic lateral cephalograms were analyze.
Measurements focused on **Superior, Middle, and Inferior airway spaces.**



Results

Comparative analyses of pre- and post-treatment cephalograms revealed no marked change in the sagittal maxillary position.
There were **significant changes to the sagittal mandibular position** and mandibular unit length.
Additionally, **substantial increases** were observed **in facial height.** Notably, all measured **airway dimensions** (SPAS, MAS, IAS) **exhibited significant expansion** post-treatment.

OROPHARYNGEAL AIRWAY MEASUREMENTS

1. Superior Posterior airway space
2. Middle airway space
3. Inferior Airway space

Conclusion

We found a significant association between the **application of the Twin Block** appliance in growing skeletal Class II malocclusion cases and the **expansion of OAW** dimensions. These outcomes hint at potential benefits in terms of craniofacial development and function, with broader implications for addressing respiratory dysfunctions linked to mandibular deficiencies.

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