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Association between variations in Sella turcica size and morphology and sagittal and vertical malocclusions

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Introduction & Aim: The growth of Sella turcica is completed early in life; therefore it may be used to predict the future developing skeletal malocclusion. This can aid in early diagnosis, reduce the future treatment burden and decrease the treatment duration leading to less complicated treatment modalities. Therefore, the aim of this study was to evaluate the relationship between Sella turcica dimensions and morphology and various sagittal and vertical malocclusions.

Material & Method: A cross-sectional study was conducted on the pretreatment lateral cephalograms of 180 subjects aged 13 to 19 years. The subjects were divided into two groups based on sagittal and vertical malocclusions. The Sella turcica dimension evaluated were length, diameter and depth measured digitally on View Pro-X software. One-way ANOVA and Post-hoc Tukey's test was applied to compare Sella turcica dimensions between sagittal and vertical malocclusions. Chi-square test was applied to compare Sella turcica morphology among sagittal and vertical malocclusions. A p-value≤0.05 was taken as statistically significant.

Result: One-way ANOVA showed significant differences between Sella turcica length (p≤0.02) and depth in vertical malocclusions (p≤0.03), whereas Post-hoc Tukey showed significant differences between Sella length (p≤0.03) and diameter (p≤0.04) in normodivergent versus hyperdivergent groups. Significant differences were found in the Sella turcica morphology in sagittal malocclusions only (p≤0.03).

Conclusion: Sella turcica length and depth can aid in predicting the future vertical growth pattern. Increased Sella dimensions were found in hyperdivergent vertical malocclusion only. Bridging of the Sella turcica was most prevalent in Class III malocclusion.

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Notes:

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