

Nasal septum deviation and inferior nasal concha bone hypertrophy in class iii facial deformity

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Abstract

The aim of this research was to analyze the morphology of the nasal septum and inferior nasal concha bone in class III facial deformities prior to orthodontic treatment in orthognathic surgery candidates. 40 subjects were included in this research. The inclusion criteria were an Angle class III, negative overjet and SNA angle less than 80°. Patients with facial asymmetry, facial trauma or who had undergone maxillofacial or ENT procedures were excluded. CBCT images were obtained for all the patients and the nasal septum deviation, morphology of inferior nasal concha bone and ostium of the maxillary sinus were analyzed and related to the complexity of the facial deformity expressed by the ANB angle and dental relations. The measurement was standardized by ICC and the data was analyzed using a chi square test and Spearman's coefficient with a p value < 0.005 for statistical significance. Nasal septal deviation was observed in 77.5 %. The deviation angle was 13.28° ($\pm 4.68^\circ$) and the distance from the midline to the most deviated septum was 5.56 mm (± 1.8 mm) with no statistical relation to the complexity of the facial deformity. The deviated nasal septum showed inferior nasal concha bone hypertrophy on the concave side of the nasal septum deviation (p=0.049). The open or closed condition of the maxillary sinus ostium was not related to any conditions in the septum or complexity of the facial deformity. Inferior nasal concha bone hypertrophy could be related to nasal septal deviation. The nasal condition in a class III facial deformity could not differ from the general population; careful in orthognathic surgery as to be assume in the Le Fort I Osteotomy and nasal approach related to nasal septum deviation and inferior nasal concha bone.

Author keywords

Facial deformity
Orthognathic surgery
Rhinoplasty
Septum deviation