3D RECONSCTRUCTION OF THE UPPER AIRWAYS OF INDIVIDUALS WITH SYNDROMIC CRANIOSYNOSTOSIS: A CASE SERIES

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Objective: Individuals with craniosynostosis (CS) usually present with respiratory complaints probably due to anatomic upper airway abnormalities, which may lead to impaired ventilation, snoring and sleep apnea. Considering that reduced pharyngeal dimensions are a predisposing factor for obstructive sleep apnea, the aim of the present study is to present a case series of CS patients with very severe upper airway volume reduction. Methods: Three individuals with CS, aged 16 to 31 years, who underwent cone beam computed tomography for craniofacial surgery planning, were prospectively evaluated. The pharyngeal volume and the minimum pharyngeal cross-sectional area were assessed by means of the Dolphin Imaging 11.7 software. A control group (CON) (n=26) of adults with skeletal class III malocclusion, without syndromes, was previously assessed (Trindade-Suedam et al 2017). Results: Mean values (±sd) of Volume for groups CON and CS corresponded to 27.3±9,4 and 7.0±3.5cm3, respectively. Minimum pharyngeal cross-sectional areas mean values (±sd) corresponded to 200.9±113.9 and 20.0±7.8mm2. Conclusion: In this case series, pharyngeal volumes and minimal cross-sectional areas of adults with craniosynostosis were considerably smaller than that of individuals with skeletal Class III malocclusion. These results suggest a greater chance of pharyngeal collapse for the CS individuals and indicate that they are at risk for obstructive sleep apnea. Further polysomnographic studies are necessary for assessing obstructive sleep apnea prevalence and severity in this specific population.