ABSTRACT

Analysis of the sagittal, vertical and transverse effects of skeletal, dental and soft tissues between different lateral osteotomy designs on surgically assisted maxillary expansion

The main objective of surgically assisted rapid maxillary expansion (SARME) is to increase the transverse dimension of the upper dental arch in individuals with maxillary atresia, demonstrating a good prognosis, depending on the surgical technique used and when correctly indicated. The present study aimed to evaluate the cephalometric, skeletal, dental and soft tissue changes in patients submitted to SARME through lateral osteotomy of the maxilla performed horizontally straight and lateral osteotomy of the maxilla performed parallel to the occlusal plane with a step in the zygomatic pillar. For this, Cone-beam Computed Tomography (CBCT) scans of 20 individuals were selected, separated into two groups according to the surgical technique used and analyzed in the preoperative period and 180 days postoperatively, through the Dolphin Imaging program where the cephalometric tracings were generated. The results showed that both osteotomies were effective in correcting the transverse deficiency of the maxilla, with statistically significant sagittal and vertical changes in dental, skeletal and soft tissues in the group in which the osteotomy was performed horizontally straight. Thus, it is concluded that the design of the lateral osteotomy in the SARME did not significantly interfere in the transverse dental and skeletal changes, however it was observed significant sagittal and vertical changes in the dental, skeletal and soft tissues in the lateral osteotomy performed horizontally straight, without step in the region of the zygomatic pillar.

Keywords: Palatal Expansion Technique. Cone Beam Computed Tomography. Jaw Cephalometry.