

Abstract

This study aims to evaluate facial morphology and shape variability of the face in preschool patients with various types of orofacial clefts following neonatal cheiloplasty; in comparison with age corresponding healthy controls. All patients were operated with the same protocol during first two weeks of life. This study is based on 3D facial models analyzes with methods of geometric morphometry and multivariate statistics.

Statistically significant differences in the mean facial shape between each of cleft groups and controls were found. Colour coded maps showed, that in patients who have only undergone neonatal cheiloplasty (patients with isolated cleft lip), facial morphology is affected to a lesser extent than in patients with more severe cleft types and underwent palatoplasty (unilateral and bilateral cleft lip and palate). The differences in comparison with controls were in isolated cleft lip patients mostly in the scar area, and also in nasal bridge and chin area. Within cleft types combined with palatal defect, typical differences in maxillary and buccal region were also observed. The differences are not becoming more pronounced in the older age category. Our results suggest that the severity of the defect together with underwent palatoplasty affect facial growth and development more negatively than neonatal cheiloplasty itself. Typical differences are not more pronounced in older category, which brings a positive prognosis for the next development. Even thanks to other benefits, such as positive psychosocial impact on the whole family, neonatal protocol can be recommended.