

論 文 要 旨

Three-dimensional analyses of nasolabial forms and upper lip surface symmetry after primary lip repair in patients with complete unilateral cleft lip and palate

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Purpose: To analyze three-dimensional (3D) nasolabial forms and upper lip surface symmetry after primary lip repair in children with unilateral cleft lip and palate (UCLP).

Methods: Subjects were 22 Japanese children with complete UCLP who underwent primary lip repair and were followed-up for 4-6 years. The 3D coordinates of facial landmarks and the angle and radius of the approximate nasal alar circle were calculated. Upper lip surface symmetry was analyzed using histogram intersection.

Results: The nasal tip and columella base were slightly dislocated to the cleft side, and the midpoint of Cupid's bow shifted to the non-cleft side. The nasal alar and the top of Cupid's bow were reconstructed at the same height, while the approximate nasal alar circle was smaller on the cleft side. The mean value of similarity for upper lip surface symmetry was 0.82; a subject with a higher value had more symmetrical contour lines in the visualized surface image.

Conclusions: Postoperative nasolabial forms were almost restored to symmetrical levels, while retaining a small nasal alar. Histogram intersection is applicable as a method for the quantitative evaluation of upper lip surface symmetry in UCLP.