

## **Changes Produced by Presurgical Orthopedic Treatment Before Cheiloplasty in Cleft Lip and Palate Patients**

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**Objectives:** The purpose of this study was to test the hypothesis that, with the use of preoperative treatment, the dimensions of the upper part of the oral cavity of an infant with unilateral cleft lip and palate (UCLP) become more similar to those of a noncleft infant.

**Design:** This was a retrospective study of upper dental casts taken at birth and prior to lip repair at 6 months of age. A treated group, an untreated group, and a group of noncleft contemporaries were compared cross-sectionally and longitudinally. Models were analyzed by the trigonometric method.

**Setting:** The study was performed at a maxillofacial center servicing a population of two million.

**Participants:** The treated group consisted of 24 babies born after 1990 with UCLP that started presurgical treatment within 20 days of life. The untreated group consisted of 25 randomly selected UCLP casts taken at birth and 25 casts taken just before lip surgery. The noncleft group consisted of 25 full-term infants whose mothers participated in the longitudinal growth study. All participants belonged to the same ethnic group.

**Interventions:** Presurgical treatment consisted of the babies constantly wearing a thin, passive acrylic plate mimicking the normal palate and a slim adhesive tape fixed to the lip segments to bring them slightly together.

**Results:** The upper oral cavity in a newborn with UCLP was significantly larger than in a noncleft infant, the only exception being in the sagittal dimension. After presurgical treatment, the upper oral cavity was remodeled and slightly enlarged; there was a lesser difference from the noncleft at 6 months than at birth. The cleft in the alveolus reduced significantly, and the position of the incisive point improved. The group without presurgical treatment had no remodeling, and the growth dynamics were similar to the non-cleft so that the dimensional differences from the normal remained the same as at birth.

**Conclusion:** The morphological characteristics of the upper part of the mouth change if the functional conditions in the oral cavity are changed. Infants with presurgical orthopedics become more similar to noncleft contemporaries than those without presurgical orthopedics.