

## **The Effect of Preoperative Use of an Orthopedic Plate on Articulatory Function in Children With Cleft Lip and Palate**

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**Objective:** To evaluate the effect of preoperative use of an orthopedic plate (OP) on postoperative articulatory function in children with cleft lip and palate.

**Subjects:** The subjects had complete unilateral or bilateral cleft lip and palate and were scheduled for a one-stage palatoplasty.

**Main Outcome Measures:** Tongue movements during sucking were analyzed by ultrasonography. Postoperative articulatory behavior was also assessed at 5 years 4 months of age.

**Results:** There was an excessive downward excursion of the rear portion of the tongue during sucking regardless of the use or nonuse of the OP. This indicated that infants with cleft palate could not create negative pressure in the oral cavity, even with the OP. However, the OP appeared effective for preventing irregular movements of the tongue during sucking. The proportion of subjects obtaining excellent articulation was significantly higher in the group using the OP until palatoplasty than in the group who did not continue using the OP. The proportion of subjects with disturbed articulatory function in the latter group was comparable with that in the control group, who never used the OP.

**Conclusions:** Continuous use of the OP up to the time of palatoplasty appeared to be effective for the postoperative articulatory function in children with complete cleft lip and palate. Inhibiting irregular movements of the tongue, the OP might assist in preventing “palatalized articulation.”