Effect of Unrestricted Bottle-Feeding on Early Postoperative Course After Cleft Palate Repair

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ABSTRACT: Although bottle-feeding after cheiloplasty is widely accepted, postoperative feeding regimen after palatoplasty is still controversial. The aim of this prospective randomized study was to evaluate the effect of bottle-feeding on early postoperative course after palatoplasty in a relatively homogeneous group of patients. Eighty-two consecutive patients with nonsyndromic cleft palate undergoing 2-flap palatoplasty by a single surgeon were randomized to feeding from a bottle with the usual nipple (G1, N = 42) or to feeding with a spoon, cup, or syringe (G2, N = 40). Complication rates, postoperative sedative use, oral intake for the first 6 days, and relative weight gain at 1 and 2 months were compared. There were no significant complications such as bleeding or respiratory problem. The overall complication rate including wound dehiscence and oronasal fistula was similar in G1 and G2 (11.9% versus 12.5%, P = 1.000) as was postoperative sedative use and mean daily oral intake for the first 5 days. Mean intake on the sixth day was significantly higher in G1. There were no significant between-group differences in relative weight gain after 1 and 2 months. In conclusion, bottle-feeding had no adverse effect on the early postoperative course after palatoplasty including complication rate, oral intake, and weight gain. These findings suggest that an unrestricted feeding regimen is appropriate immediately after palatoplasty.

KEY WORDS: Bottle-feeding, feeding regimen, sucking, palatoplasty, cleft palate


Although bottle-feeding immediately after cheiloplasty is widely accepted and practiced by increasing number of surgeons,1–3 postoperative feeding regimen after palatoplasty is still unclear. Bottle-feeding immediately after cleft palate repair has been traditionally restricted for as long as 3 weeks.4 Cohen et al5 have shown that immediate unrestricted feeding after lip and palate closure had no adverse effects on operative outcome or complications, recommending simplified postoperative management after cleft lip and/or palate repair in 1992. However, individual surgeons still tend to adopt postoperative feeding regimens based on traditional practices, and there are few data supporting the use of any particular regimen after palatoplasty.

The aim of this prospective randomized study was to objectively evaluate the effect of immediate bottle-feeding on early postoperative course after identical technique of palatal cleft closure performed by a single surgeon in a relatively homogeneous group of patients.

MATERIALS AND METHODS

Patients

Among the patients with nonsyndromic cleft palate with or without cleft lip who underwent cleft palate repair using the 2-flap palatoplasty technique by the senior author (L.T.J) between 1991 and 1996, any patient with a submucous cleft palate or a bilateral cleft was excluded. Patients with any other anomalies including syndromic clefts, craniofacial deformities such as Robin syndrome, and neurologic deficits were also excluded. A total of 82 consecutive patients were included in the study group and were followed up for 2 months. Patients were randomly assigned to 2 study groups according to type of postoperative feeding: G1 (N = 42), liquid foods were provided in the bottle as usual, with the same nipple used by the child; and G2 (N = 40), all types of foods were provided by spoon, cup, or syringe.

Data Collection

To objectively evaluate the effect of feeding regimen on early postoperative course, the incidences of complications, the frequency of postoperative sedative use, the amount of oral intake for the first 6 days (from the day of surgery), and the relative weight gains at 1 and 2 months were compared between the 2 groups. Complications included bleeding, respiratory problem, wound dehiscence, and oronasal fistula. (Alveolar and/or anterior palatal fistula intentionally left unrepaird were not recorded.) A dose of 0.5 mL/kg of 10% chloral hydrate (Pocral; Hanlim Pharm, Seoul, Korea) was given when the infant was very irritable. The amount of oral intake was measured daily for 6 days starting from the day of surgery. The weight of the infant at the first and the second postoperative months was divided by the weight at the day before surgery, and the percent weight gain was calculated.

Statistical Analysis

Fisher exact test was used to compare complication rates. The frequency of sedative use was compared using an unpaired t-test, whereas oral intake and relative weight gains were compared using the Student’s t-test. P < 0.05 was considered statistically significant.

RESULTS

The mean age at the time of operation was 8.1 months in G1 (range, 5–25 mo) and 7.8 months in G2 (range, 4–16 mo). There were 22 males and 20 females in G1 and 16 males and 24 females in G2. None of these characteristics differed significantly between the 2 groups. There were no significant between-group differences in

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This article did not require any sources of funding.
The authors declare that they had no financial interests or commercial associations during the course of this study.
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ISSN: 1049-2275
DOI: 10.1097/SCS.0b013e3181b2d1d1
There were no significant complications such as bleeding and respiratory problem in either group. Wound dehiscence developed in 1 infant of G1 but completely healed after conservative management. Oronasal fistula occurred in 4 patients in G1 and in 5 patients in G2. The overall complication rates in G1 and G2 were similar (11.9% versus 12.5%, \( P = 1.000 \)).

The mean number of postoperative sedative administration was also similar in G1 and G2 (1.33 versus 1.35, \( P = 0.950 \)), as were the percentage of patients who required sedative administration (Fig. 1).

There were no significant between-group differences in the mean amount of daily oral intake for the first 5 days (i.e., through the fourth day after surgery). However, oral intake on the sixth day was significantly higher in G1 than in G2 on the sixth day (the fifth day after surgery; analysis of covariance with age covered, \( P = 0.042 \)).
Relative weight gain did not differ significantly between the 2 groups (Table 2).

**DISCUSSION**

Traditional teaching tells that a bottle with a nipple should not be used early after cleft palate repair because undue negative pressure on the suture line can conceivably produce disruption and that feeding by way of cup, spoon, or syringe has been the rule. In contrast, unrestricted feeding after cheiloplasty has become the standard of care because it has shown favorable outcomes along with comparable complication rates.

However, there are few scientific foundation nor empirical data supporting the old myth forbidding bottle-feeding after palatoplasty. An unfamiliar way of feeding makes both the infant and the mother irritable and uncomfortable. Our results demonstrate that immediate unrestricted feeding had no significant adverse effect on early postoperative complications, indicating that bottle-feeding is safe for these infants.

The incidence of oronasal fistula after cleft palate repair has been reported to vary between 3% and 23% and is reported to be associated with the severity of the cleft and with the type of palatal closure. We used a relatively homogeneous patient sample regarding the extent of cleft: we excluded patients with Veau group 4 clefts and submucous cleft palates. Our patient sample was also homogeneous in sex and age, and we used a standardized technique for palatal closure performed by a single surgeon, making the outcomes more reliable.

Although statistically insignificant, G2 infants ingested a larger amount of food during the first 3 days (until the second day after operation), which coincided with the period when most of the sedative was administered. The need for sedatives was also somewhat lower in G2 for 2 days after surgery. Although these findings indicate that postoperative bottle-feeding may be associated with more pain during the first 2 or 3 days after surgery, it did not lead to significant increases in wound disruption or fistula formation. In fact, we presume that the initial pain prevented the infants from vigorous sucking, which might be harmful for oral wound healing. After the initial 2 or 3 days, the amount of oral intake started to increase particularly in G1 infants, showing significant difference at the sixth day (the fifth postoperative day). The relative weight gain also tended to be higher in G1 for 2 months after surgery, but these differences were not significant.

Although we did not evaluate the emotional and psychologic aspects, both types of feeding had the same outcomes in early complication rate, oral intake (except for the sixth day when bottle-feeding infants ate more), and weight gain. These findings suggest that bottle-feeding could be attempted during the immediate postoperative period because the feeding method did not affect the early postoperative course after cleft palate repair.

**REFERENCES**