Original Article

Correlation between Parental Migration and Outcomes of Surgery in a Child with a Cleft Lip and Cleft Palate

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Objective: To describe the correlation between parental migration and surgical outcomes in a child with a cleft lip and palate.

Materials and Methods: This was a cross sectional analytic study. Parents of children with a cleft lip and palate aged between 2 to 10 years were included in the present study using structural interviews and medical records. The surgical outcomes of children with a cleft lip and palate were analyzed using SPSS statistics 17.0. Descriptive analyses, odds ratio and 95% confidence interval (95% CI) were used to characterize the data.

Results: 49 participants between 2 and 10 years of age were enrolled. The prevalence of parental migration (migration of both the father and mother) was 12.2 percent. The surgical outcome was good estimated by judgment of those who were the cleft lip and palate patient's relatives and had few complications. However, the result also showed that parental migration affected graceless speech development (OR 9.75 95% CI = 1.45, 65.36) and parental migration was not associated with other outcome of surgery and complications.

Conclusion: In most families of a child with a cleft lip and palate, the parents lived together with their child. However, in the families with migration of the father and mother, a child with a cleft lip and palate suffered difficulties with speech problems.

Keywords: Parental migration, Cleft lip and palate

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The findings of Multiple Indicators Clusters Survey 2012 of the situation of children and women in Thailand by the National Statistical Office reveals that 31.2 percent of children ages 0 to 17 years old who did not live with their father and mother are found in the Northeastern region[1]. The main cause of this incidence is the migration of their father and mother where the children are then raised by their grandparents. Some studies indicate that these children have slower development than those who are raised by their mother and father[2]. While other studies which investigate the impacts on their mental health reveal that they get lower school grades, drink alcohol more often and are less satisfied with their living place than those who stay with their father and mother[3].

The conditions of cleft lips and palates are congenital anomalies of skull and facial bone[4]. The world's highest cleft lip and palate (CLP) incidence is found in the Northeast of Thailand, where the prevalence is 2.5 per 1,000 newborns[5]. Effective treatment requires the coordination between multidisciplinary team members who are, for instance, pediatrics, plastic surgeons, and dentists. The patients must undergo treatment from the neonatal age to 19 years old[6]. Parent's cooperation is essential for the treatment especially during the pre-operation process when the patients are in their first year of life[7]. Moreover, this includes commuting to the hospital, and constant care taking during the post-operation processes both in the hospital and at home.

However, a lot of children in the Northeast of Thailand live far away from their mother and father. They are raised by the older relatives[2,3] who are not appropriate ages for taking care of young children. These relatives may have other life burdens that obstruct giving children good care[7,8]. It seems to be more difficult for these relatives when they have to raise the CLP children due to the series of surgeries[9]. It is vital for the CLP patients to receive close care from their parents during each operation. Therefore, the researchers want to investigate the correlations between the migration of the parents and the outcomes of the treatment surgery in child CLP patients.

Materials and Methods

This is a cross-sectional analytic study. Inclusion criteria: The guardians of 2 to 10 years old CLP patients who received the treatment from Srinagarind Hospital from August to October 2018 and should be able to communicate without

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any problems. Exclusion criteria: The guardians who were not willing to participate in the study and not be younger than 18 years old and the patients must have no other syndromic cleft lip cleft palate conditions. The 49 sample population were used by The Eurocleft project 1996 to 2000 standard guidelines and 30 percent allow for lost. Tool for data collection was the interview form based on a structured questionnaire and the review of patient's medical record. The form included these 5 parts; 1) the general information of the interviewee, 2) the general information of the patient, 3) illness history, 4) surgical outcomes and complications, and 5) the patient's family description. The double entry database was employed and the Epi info for dos computer program was used to examine the data accuracy. After that, SPSS 17.0 for Windows were utilized for data analysis. The data was presented in the prevalence rates and percentage.

Odd ratio and 95% CI were employed in statistical analysis. This study received the approval from the Center for Ethics in Human Research, Khon Kaen University (HE611330).

Definition of word used in the study

1) Parental migration means a father and a mother migrates to another place and cannot live with a child for at least 1 year.

2) The outcomes of surgery are bad surgical outcomes and complications in a child with a cleft lip and palate such as cheiloplasty or palatoplasty at appropriate age, pronunciation, swallowing, hearing, dental health, associated diseases and complications.

Results

The findings showed that there were 49 CLP patients at the age of 2 to 10 years old, and 31 cases were male (63.3%). The unilateral CLP condition was found in 24 cases (49.0 %) whereas the bilateral CLP condition was found in 17 cases (34.7%). The unilateral cleft lip condition was found in 3 cases (6.1%), and the bilateral cleft lip condition was found in 2 cases (4.1%). The unilateral cleft palate condition was found in 2 cases (4.1%), and the bilateral cleft palate condition was found in 1 case (2.0%). In addition, 36 married parents (73.4%) and 13 divorced parents (26.5%) were found.

The parental migration (migration of both father and mother) occurred in 6 families (12.2%), and all parental migration was found in married parents as shown in Table 1. The findings of surgical outcomes and complications indicated that the numbers of "Cheiloplasty at appropriate age" and "Palatoplasty at appropriate age" were equally at 46 cases (93.9%) as shown in Figure 1(a) and other complications as shown in Figure 1(b).

Speaking and pronunciation was found at "good" in 32 cases (65.3%). In 31 of the cases (63.3%), the patients had a "good" swallowing condition. The highest rate of appearance was shown at "fair" from 19 cases (38.8%). The hearing condition was found the most at "good" in 26 cases (53.1%). While "bad" was found the most in dental health condition which occurred in 18 cases (36.7%). The highest rate of the overall treatment result was shown at "good" from 29 cases (59.2%) and other as shown in Figure 1(c).

Table 1. Prevalence of parental migration from all participants (n = 49)

	Married parents (percent)	Divorced parents (percent)	Total (percent)
Parental migration	6 (12.2)	0 (0.0)	6 (12.2)
Non-parental migration	30 (61.2)	13 (26.5)	43 (87.7)

The findings in correlations between the parental migration and the surgical outcomes in CLP patients showed Pronunciation was at "fair" and "bad" levels was at 3 families (50.0%) and non-parental migration was at 4 families (9.3%) which was statistical significance (OR 9.75 95% CI = 1.45, 65.36). While other operative conditions and complications had no correlation (95% CI include null value) as shown in Table 2.

The guardians of the 6 patients affected from the parental migration were varied. The major guardians were either the paternal or the maternal grandmothers which were found in 4 cases (66.7%). While 2 of the cases were taken care of by both grandfather and grandmother (33.3%). The findings about the 43 guardians of the patients who had no parental migration revealed respectively that 17 of the cases were taken care of by the mothers (39.5%), 14 cases were taken of by grandmothers (32.5%), 6 cases (13.9%) were taken care of by mothers and fathers, 2 cases (4.6%) were taken care of by mothers and grandmothers, 3 cases (7.0%) were taken care of by grandfathers and grandmothers, and only 1 case (2.3%) was taken care of by the father.

Discussion

The Most surgical outcomes in CLP patients were found at "very good" and "good" levels. However, the low prevalence of dental caries due to the lack of dental health reports in most medical records. The major presence of associated disease was bilateral otitis media effusion. Nevertheless, it was not correlated with the parental migration. Bilateral otitis media effusion is common in almost every CLP patient because the abnormal structure of palate muscle affects the pressure adjustment in the tympanum[10].

The prevalence of complications was low and not correlated with the parental migration. The study of Darawan et al stated that the center provided the continuous and comprehensive treatment to CLP patients including giving advice and the post-operative evaluation to the guardians whether they were fathers and mothers or other relatives who took care of the patients in order to enable them to employ the proper treatment[11].

The prevalence of "fair" and "bad" levels in pronunciation was shown in the correlation with the migration of both father and mother with statistical significance.

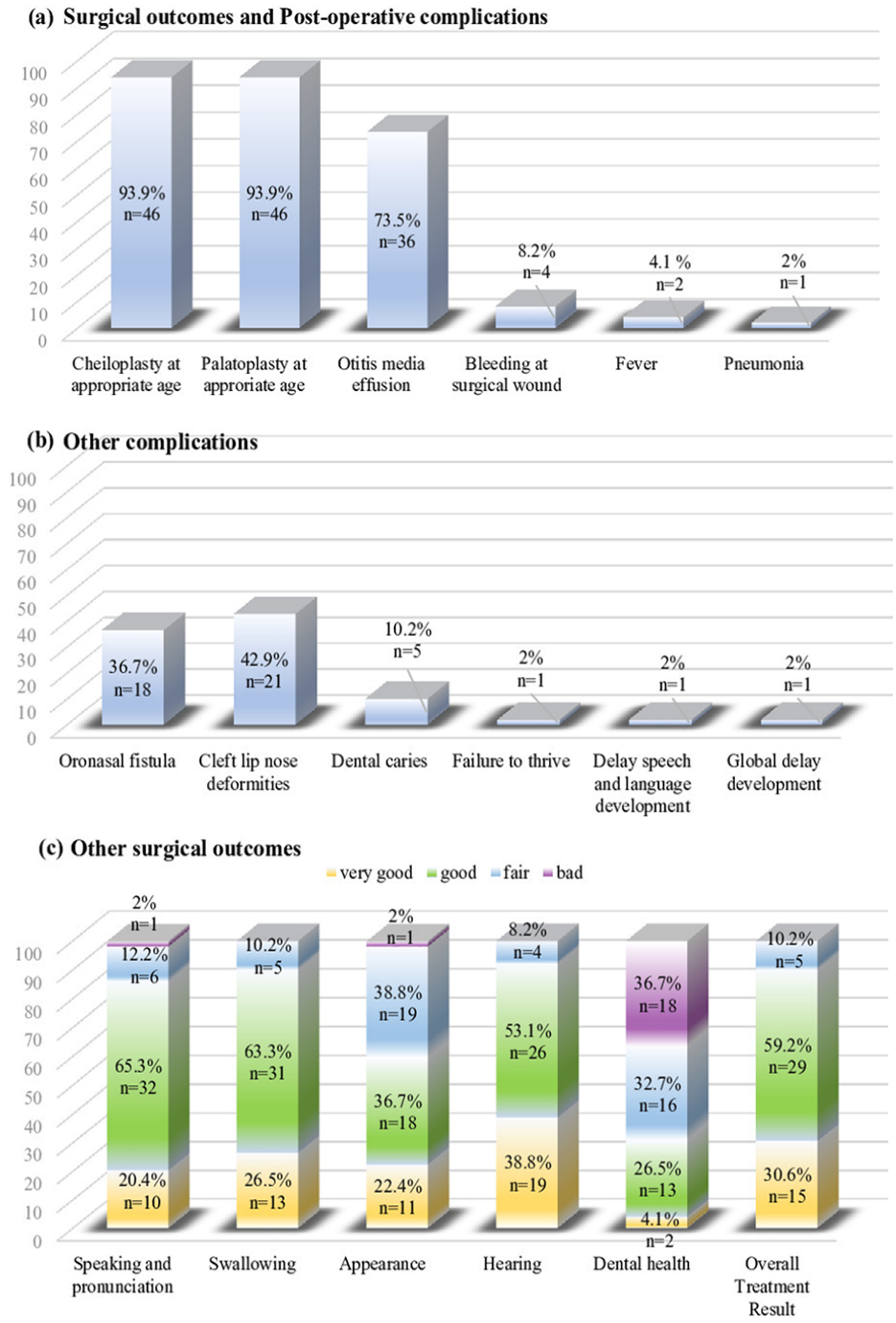

Figure 1. The outcomes of surgery and complications (n = 49).

The group of children with migration both father and mother had 9.75 times occurring graceless speech development than those with non-migration of both father and mother. The study of Nanthamongkolchai et al indicated that the child who did not live with both of his or her parents had developmental defects[12], especially in language development[2]. This study however, found only one child (2.0%) having delayed speech and language development conditions. This is due to the lack of language development reported in most medical records. The findings also

Table 2. Correlation between parental migration and outcomes of surgery

	Parental migration n = 6	Non-parental migration n = 43	OR	(95% CI)
	Number (percent)	Number (percent)		
Not receive cheiloplasty at appropriate age	1 (16.7)	2 (4.7)	4.10	(0.31, 53.77)
Not receive palatoplasty at appropriate age	0 (0.0)	3 (7.0)	NA	NA
Pronunciation was at "fair" and "bad" levels	3 (50.0)	4 (9.3)	9.75	(1.45, 65.36)*
Swallowing was at "fair" and "bad" levels	2 (33.3)	3 (7.0)	6.67	(0.85, 52.48)
Appearance was at "fair" and "bad" levels	4 (66.7)	16 (37.2)	3.37	(0.55, 20.55)
Hearing was at "fair" and "bad" levels	1 (16.7)	3 (7.0)	2.67	(0.23, 30.80)
Dental health was at "fair" and "bad" levels	6 (100)	28 (65.1)	NA	NA
Overall treatment result was at "fair" and "bad" levels	1 (16.7)	4 (9.3)	1.95	(0.18, 21.09)
Bilateral otitis media effusion	3 (50.0)	33 (76.7)	0.30	(0.53, 1.74)
Bleeding at surgical wound	0 (0)	4 (9.3)	NA	NA
Post-operative fever	0 (0)	2 (4.7)	NA	NA
Post-operative pneumonia	0 (0)	1 (2.3)	NA	NA
Oronasal fistula	2 (33.3)	16 (37.2)	0.84	(0.13, 5.13)
Cleft lip nose deformities	3 (50.0)	18 (41.9)	1.39	(0.25, 7.69)
Dental caries	0 (0)	5 (11.6)	NA	NA
Failure to thrive	0 (0)	1 (2.3)	NA	NA
Delay speech and language development	0 (0)	1 (2.3)	NA	NA
Global delay development	0 (0)	1 (2.3)	NA	NA

* = 95% CI not include null value
NA = non-accessibility

disassociated to the study of Somchit et al that stated that by using the developmental screening tool, Denver II, Tawanchai Center found that 54.1 percent of the CLP patients at the age of 5 had slow development[13].

The findings about the mother was the main care giver of the patient whose both parents did not migrate to other places, whereas the grandmother was the main care giver of the patient who was from the parental migration environment. These findings correlated with the previous research of UNICEF Thailand and Mahidol University[2,3].

The significantly correlated with receiving cheiloplasty and palatoplasty at an appropriate age of the CLP patients was at 93.9%, 93.9%. This correlates with the previous research of Tawanchai Center that indicated that 93.7%, 92.5% of CLP patients received cheiloplasty and palatoplasty at appropriate ages[14].

12.2% of the prevalence of parental migration (migration of both father and mother). However, the study of Mahidol University revealed that 48.7% of the normal children age 8 to 15 years old in the Northeast experienced the migration of both father and mother[3]. The CLP symptoms affect the patients and families' mental and social conditions[15,16] and resulted in more burdens[17], and more expenses[18,19]. The parental migration in the normal children's families is caused from economic necessity[20], however, this study found that it occurred in the CLP patients' families lower than in the normal children's families. Therefore, the condition of the children with CLP may prevent their parents from migration.

Limitation of the study

Small sample size can be produce beta error.

Conclusion

Most of families of children with CLP did not have the parental migration. The result of surgical outcomes were good, and the complications were low. The result of the surgical outcomes in the patients who had the parental migration environment tended to be bad, especially the patients who did not live with their fathers and mothers. The delay of speech and language development was found at bad levels in the patients whose father and mother both migrated.

What is already known on this topic?

The highest prevalence of children who did not live with their parents was found in the Northeast due to parental migration. The effects of the incidence were on children's health conditions, delay in children's development, low study scores, alcohol consumption and low satisfaction in the living place. There was no study that investigated the correlations between parental migration and surgical treatment results in CLP patients.

What this study adds?

The patient whose father and mother migrated tended to have bad surgical outcomes. The patients whose

father and mother migrated and were taken care of by the grandmothers had delayed speech and language development. The speech and pronunciation promotion should be more encouraged among these patients. In addition, the information of dental health, weight and height and delay development should be recorded in the medical record. The further study should examine the dental health, weight and height and delay in development of the patients with the screening tools.

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Potential conflicts of interest

The authors declare no conflicts of interest.

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