

Research Article

Characteristics of Charity Cleft Patients in Haulussy General Hospital 2017-2019

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Received 17 April 2023; Accepted 27 November 2023

<https://doi.org/10.23886/ejki.11.397.250>

Abstract

Cleft lip and palate is a common congenital disorder with an incidence of 1 per 300 live births of Asian descent. There is a lack of cleft epidemiological data due to the absence of plastic surgeons, patients were referred to other provinces or enlisted to charity programs. This paper aims to evaluate the characteristics of our cleft patients at Haulussy General Hospital, Ambon, Maluku from 2017 – 2019. This is a retrospective study of 69 patients treated at Haulussy General Hospital, Ambon, Maluku, charity program from 2017 – 2019. Age, gender, diagnosis, procedure, and nutritional status were collected. 52% of patients are male with a median age of 4 years (range: 3 months – 34 years). The most common diagnosis was complete cleft palate (n=19), and the rarest was microform cleft lip (n=1). Complete cleft lip is more common in males, while isolated cleft palate is more common in females. The median age for primary lip repair, lip revision, and primary palate repair/revision was 1 year, 4.5 years, and 8 years, consecutively. Among 32 patients assessed for nutritional status, 22% were malnourished (19% were underweight, and 3% were severely underweight). Lip repair was done in 28 patients, palate repair in 36 patients, and lip or palate revision in 16 patients. The main techniques used were Lazy S and von Langenbeck. This retrospective study at Haulussy General Hospital from 2017 to 2019 highlights predominant cleft cases and malnutrition among patients. The findings emphasize the importance of tailored interventions and comprehensive care for individuals with cleft lip and/or palate.

Keywords: cleft lip, cleft palate, epidemiology, therapeutic.

Karakteristik Pasien Bibir dan Lelangit Sumbing pada Bakti Sosial di Rumah Sakit Haulussy Tahun 2017-2019

Abstrak

Celah bibir dan/atau langit-langit merupakan kelainan kongenital yang umum terjadi dengan insidensi 1 per 300 kelahiran hidup pada keturunan Asia. Tidak ada data epidemiologi sumbing di Maluku dan karena tidak adanya ahli bedah plastik, pasien dirujuk ke provinsi lain atau mendaftar ke program bakti sosial. Riset ini bertujuan untuk mengevaluasi karakteristik pasien celah bibir di rumah sakit kami dari tahun 2017 – 2019. Ini adalah studi retrospektif terhadap 69 pasien yang dirawat di program amal rumah sakit kami dari tahun 2017 – 2019. Rasio pasien laki-laki dan perempuan adalah 36:33 dengan usia rata-rata 4 tahun (rentang: 3 bulan – 34 tahun). Diagnosis yang paling umum adalah celah langit-langit komplit (n=19) dan yang paling jarang adalah celah bibir mikroform (n=1). Celah bibir komplit lebih sering pada laki-laki sedangkan celah langit-langit terisolasi lebih sering pada perempuan. Usia rerata untuk perbaikan bibir primer, revisi bibir, dan perbaikan/revisi langit-langit primer adalah 1 tahun, 4,5 tahun, dan 8 tahun, berturut-turut. Di antara 32 pasien yang dinilai status gizinya, 22% mengalami malnutrisi (19% kurus dan 3% sangat kurus). Perbaikan bibir dilakukan pada 28 pasien, perbaikan langit-langit pada 36 pasien, dan perbaikan bibir atau langit-langit pada 16 pasien. Teknik yang paling banyak digunakan adalah Lazy S dan von Langenbeck. Penelitian retrospektif di Rumah Sakit Umum Haulussy dari tahun 2017 hingga 2019 menyoroti kasus sumbing dan malnutrisi yang dominan di antara pasien. Temuan ini menekankan pentingnya intervensi yang disesuaikan dan perawatan komprehensif untuk individu dengan bibir sumbing dan/atau langit-langit mulut.

Kata kunci: Bibir sumbing, celah langit-langit, epidemiologi, terapi.

Introduction

Cleft lip and/or cleft palate are congenital abnormalities that are apparent in newborns. There are various risk factors related to this disorder, such as genetics, retinoid acid usage, phenytoin consumption, cigarette smoking or alcohol consumption during pregnancy. Males are more likely to experience cleft lip and cleft palate abnormalities. However, isolated cleft palate is more common in females.¹ Mai et al² stated that cleft lip was the second most common congenital disorder in the United States, with a prevalence of 10.25 per 10,000 live births, and cleft palate ranks third with a prevalence of 5.91 per 10,000 live births. In Southeast Asian descent, the incidence of cleft lip and/or palate is 1.36 per 1,000 live births.³ Based on the 2013 Indonesia Basic Health Research data, the percentage of disability in children aged 24 to 59 months with a minimum of one type of disability was 0.53%. Among them, 0.08% were babies with abnormalities in the lips, palate or both.⁴

There are no epidemiological data on cleft lip and cleft palate patients in Maluku. Some of these patients were referred to other provinces with available plastic surgeons or enlisted to charity programs that arrange surgeries in several hospitals. Our program is a charity program which is held once a year. This collaboration program involves knowledge transfer for students of our medical school and surgeries conducted by plastic surgeons and urologists for patients in need.

This study aims to record and analyse cleft patients' data in a hospital charity program from 2017-2019. This is the first epidemiological data on cleft lip and cleft palate patients in Maluku province for developmental research purposes.

Methods

This retrospective study, conducted at Haulussy General Hospital in Ambon, Maluku, spans 2017 to 2019. The focus of the study encompasses patients with cleft lip and/or palate who underwent charity surgery, and the data for this investigation were sourced from their medical records. Excluded from the study were patients with incomplete medical records.

Haulussy General Hospital is classified as a B-type hospital in Indonesia. Operating as a facility capable of delivering comprehensive medical services, including those provided by specialists and limited subspecialists, aligns with the planned establishment of type B hospitals in each provincial capital. These hospitals are designed to accommodate referral services from district

hospitals. Notably, the hospital lacks practising plastic surgeons.⁵

The data extracted from medical records encompassed key variables such as age, gender, diagnosis, procedure details, and nutritional status. The latter was assessed using the Weight-for-age Z-scores chart from WHO Child Growth Standards. Using Microsoft Excel, Data was analysed using average, median, and percentage.

Throughout the charity surgery initiative, a dedicated team from overseas brought surgical instruments, including a palatoplasty set and a minor set for labioplasty. Suturing materials included Polyglactin 910 absorbable sutures (4-0, 5-0, and 6-0) for mucosal and muscle suturing; and Polypropylene nonabsorbable sutures (5-0 and 6-0) for skin suturing. The program utilized two operating rooms, each with an anesthesia team (one anesthesiologist and one nurse anesthetist), one plastic surgeon, two plastic surgery residents, and three surgical nurses.

Following surgery, most patients spent a night in the hospital and underwent a liquid diet for one day. Dietary adjustments were made based on the patient's age. All patients who underwent cleft lip and cleft palate surgeries received routine follow-ups until their surgical wounds were fully healed. The plastic surgeon team conducted initial wound evaluations during their 2-week stay in Ambon. Subsequently, two dedicated nurses responsible for inpatient wound care and postoperative outpatient care, conducted routine follow-ups in the ensuing days, extending until one month postoperative.

Results

The team performed cleft surgery on 69 patients from 2017-2019. 52% of patients were male, while 47% were female. Complete cleft lip was most common in males. Incomplete cleft lip, complete cleft palate, and isolated cleft palate were more common in females. The patient median age was 4 years (range, 3 months to 34 years). The median age for primary lip repair was 1 year, lip revision was 4.5 years and palate repair (both primary and revision) was 8 years and 70% of patients came from Ambon Island (Table 1).

The diagnosis was written partially in some of the medical records. Some of the patients had more than 1 diagnosis. There were 52 diagnoses of cleft lip and 53 diagnoses of cleft palate. The most common diagnosis was complete cleft palate, while the rarest was microform (Table 2).

Table 1. Characteristics of Patients during Charity Surgery at Haulussy General Hospital from 2017 to 2019 (n=69)

Characteristics	n
<i>Age of Intervention (median-range)</i>	
Primary lip repair	1 (3 mo – 10 yo)
Primary palate repair	8 (7 mo – 21 yo)
Lip revision	4.5 (9 mo – 35 yo)
Palate revision	8 (3 yo – 34 yo)
<i>Residence (n,%)</i>	
Ambon Island	53 (77%)
Other Maluku Islands	16 (23%)

Table 2. Diagnosis of Patients Who Underwent Cleft Charity Surgery at Haulussy General Hospital from 2017 – 2019 (n=105)

Diagnosis	Patients	%
Cleft lip		
Unilateral		
Complete	5	4.8
Incomplete	9	8.6
N/A	15	14.3
Bilateral		
Complete	7	6.7
Incomplete	4	3.8
N/A	5	4.8
Microform	1	1
N/A	6	5.7
Cleft Palate		
Complete	19	18.1
Incomplete	18	17
N/A	16	15.2

The nutritional status was assessed in 32 out of 69 patients aged 3 months to 5 years old. 22% of the children were malnourished: 19% were underweight and 3% were severely underweight (Figure 1).

Meanwhile, the nutritional status of the rest could not be determined because there was no height data, which is necessary for the calculation

in the age group of more than 5 years old using different growth charts (CDC growth chart). The total number of primary surgery performed was 64. The most common lip repair technique was Lazy S, and the most common palate repair technique was von Langenbeck. The total revision surgery was 16, including 8 lip revisions and 8 palate revisions (Table 3).

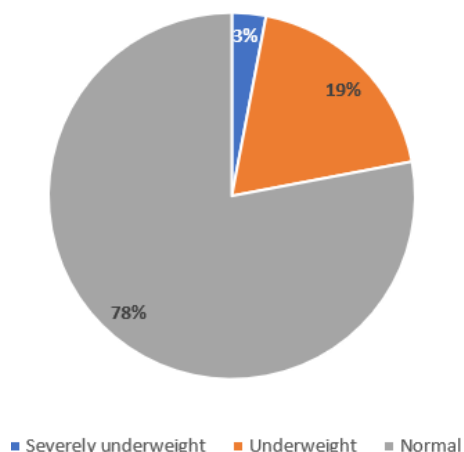


Figure 1. Nutritional Status of Patients Who Underwent Cleft Charity Surgery at Haulussy\ General Hospital From 2017 – 2019 (N=32)

Table 3. Procedure of Patients Who Underwent Cleft Charity Surgery at Haulussy General Hospital from 2017 – 2019 (n=64)

Status of Surgery	Patients
<i>Primary Surgery</i>	
Lip Repair (n=28)	
Millard	8
Fisher	1
Tennison	4
Lazy S	9
N/A	6
Palate repair (n=36)	
Von Langenbeck	17
Intravellar Veloplasty	8
Furlow	3
Vomer flap	0
Perko	4
N/A	4
<i>Secondary Surgery (n=16)</i>	
Lip Revision	8
Palate Revision	8

Discussion

The number of male patients who underwent surgery was higher (54%) than female. We see more complete cleft lip in our male patients and more isolated cleft palate in our female patients. This is comparable to the cleft lip and palate epidemiology reported in a meta-analysis by Salari et al in 2022.⁶ Nonetheless, due to the small sample size and incomplete diagnosis in the medical record, this data is not representative of the Maluku population.

Patients with cleft lip and cleft palate may undergo several reconstructive surgeries, depending on the severity of the cleft. As the first surgery, the

ideal timing for lip repair is at 3 months old. The ideal timing for palate repair is before 18 months of age to optimize speech development¹, although protocols may vary in different centers.³ However, the patients in our dataset underwent primary surgery at the age of 4 years (median, range 3 months – 21 years). Though the reason for the delay was not recorded in the medical record, the absence of a plastic surgeon in Maluku is most likely one of the causes. Delays in surgeries may lead to speech abnormalities, such as articulation and phonological abnormalities, resulting in psychosocial problems and difficulties in the learning process.⁷ However, because there were no speech evaluation and therapy records, our dataset cannot assess this issue objectively.

The number of islands in Maluku may be one of the reasons for the difficulty of disseminating information about charity surgery performed by Stichting Samenwerking Vlissingen Ambon (SSVA); the cost of inter-island transportation can also be a barrier for patients to come to Ambon. Therefore, only 23% of our patients came from outside the Ambon Island.

In this study, only 22% of the children were malnourished, and 3% were severely underweight. This is a rough indicator of malnutrition (undernutrition) because being underweight may result in acute or chronic malnutrition. A stronger indicator for acute malnutrition is wasting, which is based on a weight-for-height chart, while an indicator for chronic malnutrition is stunting, based on the height-for-age chart.⁸ Chronic malnutrition is more common than acute malnutrition in children with cleft palate and lip.⁹ However, in this study, many patients' height were not documented in the medical record. Therefore, we were unable to evaluate whether our malnourished patients were acutely or chronically malnourished.

Malnutrition in children with cleft palate and lip is mainly associated with feeding difficulties, including the failure to generate sufficient negative pressure during feeding, affecting the attachment to the breast/artificial nipple, milk extraction, bolus organization and retention of the bolus before swallowing initiation.¹⁰ Infectious processes in the upper airways or middle ear also contribute to causing growth deficiency in children with these malformations.¹¹ In this study, there were no data about the patients' feeding practices, such as whether they were breastfed or used assisting tools such as special feeding bottles or gastric tube.

Children with cleft palate and lip are more prone to malnutrition than those with only cleft lip. In this study, 4 out of 6 underweight children had

cleft palate and lip. One severely underweight child had a cleft palate and lip.¹²

Malnutrition was also found to be higher among unilateral cleft palate and lip infants compared to their bilateral counterparts. This may be due to severe facial disfigurement and apparent difficulty in breastfeeding in bilateral cleft palate and cleft lip found in patients who have forced parents to seek medical attention earlier than their unilateral counterparts.¹³

The most commonly used primary surgical technique in patients with a cleft lip was Lazy S. This technique uses a gently curved 'S' shaped incision, which is associated with less scar contraction than straight lines because the tissue within the curves can stretch so both ends of the incision line might stay in place without contraction.¹⁴ The most commonly used primary surgery technique in patients with cleft palate was von Langenbeck. Von Langenbeck palatoplasty is probably the oldest technique, and it closes the cleft palate by mobilizing bipediced mucoperiosteal flaps medially. The muscle dissection and muscle suturing are done as additional procedures to create a muscle sling.¹⁵

Conclusion

Maluku Province needs a plastic surgeon at its referral center hospital to ensure the intervention of patients with proper timing at the recommended age. Appropriate timing and management for patients with cleft lip and palate results in optimal speech function, nutritional status, and prevention of respiratory infections. In addition, collaborative therapy with a speech and language pathologist is essential to evaluate and manage a patient's speech.

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