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Surgical Techniques for Cleft Lip Repair

Insights From Latin America and the Caribbean

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Background: Cleft lip (CL) repair techniques vary significantly, often depending on surgeons' experience, preference, and cleft characteristics. In Latin America and the Caribbean (LAC), where CL prevalence is high, research on surgical practices remains limited. This study aims to document and analyze preferences for unilateral (UCL) and bilateral cleft lip (BCL) repair among Operation Smile surgeons in LAC to support improved cleft care.

Methods: A 22-question survey was distributed anonymously electronically to credentialed LAC surgeons performing UCL and BCL repairs. The survey explored demographics, preferred repair techniques, and surgical approaches such as nasal floor closure, gingivoperiosteoplasty, and setback techniques. Responses were analyzed using descriptive and inferential statistics.

Results: A total of 101 surgeons from 13 countries participated, with Peru (20%) having the highest representation. Most respondents were male (71%), with 36% having less than 5 years of experience. The Fisher technique was the most preferred method for UCL (66%) and BCL (29%), particularly among less experienced surgeons. Technique preferences varied significantly by country ($P < 0.001$). For UCL, most surgeons (78%) closed the nasal floor by joining septal and lateral mucosa, and 50% performed gingivoperiosteoplasty. For BCL, 58% used labial adhesion for maxillary protrusion, and 24% performed premaxillary setbacks, both varying significantly by experience and technique ($P < 0.001$).

Conclusions: This study reveals substantial variability in cleft repair techniques across LAC, with the Fisher technique emerging as a dominant preference. These findings provide a foundation for future research focusing on outcomes and complications to optimize cleft care in the region.

Key Words: cleft lip, surgical techniques, Latin America

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There is no current consensus regarding the optimal surgical technique for cleft lip (CL) repair. The technique used is often based on the individual surgeon's experience, preference, and type of cleft.[1,2]

The Millard technique and its modifications have been the most used technique for unilateral cleft lip (UCL) repair.[3–6] Today, many of the techniques available for UCL repair are known by their eponyms: Fisher, Mohler, Tennison-Randall, Veau, and Onizuka.[7] The number of available techniques makes "standard" UCL hard to define and study. Many techniques are also used for bilateral cleft lip (BCL) repair, including the Millard technique, Mulliken technique, Manchester technique, Tennison-Randall technique, and Veau's technique.[8–11]

Despite a disproportionately large burden of CL across Latin America and the Caribbean (LAC), there is scarce research on the techniques used for CL repair across the region.[12] Few studies published for the region describe both novel and established techniques for UCL repair.[7,13] In this study, we investigated the technique preferences for UCL and BCL repair of credentialed Operation Smile surgeons in LAC countries. Operation Smile is a CL and palate nongovernmental organization that has had a longstanding presence in 13 countries in the LAC region and therefore has unique access to cleft surgeons. Our aim was therefore to provide clarity regarding technique preferences for this surgeon cohort to help streamline future research and quality improvement efforts regarding cleft care in the LAC region.

MATERIALS AND METHODS

A survey tool was created to identify surgical preferences of Latin American Operation Smile volunteers for unilateral and bilateral CL surgery. Questions were sorted in the following 3 domains: (1) general demographics, (2) UCL technique preferences and practices, and (3) BCL technique preferences and practices. For UCL technique, we queried preferred primary lip repair technique as well as specific preferences of freeing the orbicularis oris muscle, creating incisions, closing the nasal floor, and performing gingivoperiosteoplasty (GPP). For BCL technique, we queried preferences regarding primary bilateral lip repair technique as well as specific preferences of the extent of dissection, tissue recruitment, use of labial adhesion, and premaxillary setback techniques.

A draft of the survey instrument was piloted, and feedback from this pilot was incorporated into the final survey. The final survey incorporated 22 questions that explored the demographics, professional background and surgical practices for unilateral and bilateral CL surgery. The survey was created and distributed in Spanish (see Survey, Supplemental Digital Content 1, for survey questions, http://links.lww.com/SAP/B129). All responses were anonymized.

Cleft surgeons were eligible for this survey if they perform complete UCL and BCL repairs independently and are medical volunteers from one of the LAC countries where Operation Smile has a presence. The survey was distributed through electronic format for a 30-day period in March to April of 2024.

This research was deemed to represent a quality improvement project by our ethical review board and did not require formal ethical

TABLE 1. Preferences of UCL Repair Technique

n (%)	Fernandez	Fisher	Millard	Mohler	Other	Total	*P*
Respondents	5 (5%)	67 (66%)	19 (19%)	3 (3%)	7 (7%)	101 (100%)	N/A
Sex							
Female	1 (1%)	24 (24%)	2 (2%)	0 (0%)	2 (2%)	29 (29%)	0.190
Male	4 (4%)	43 (43%)	17 (17%)	3 (3%)	5 (5%)	72 (71%)	
Years of experience							
0–10 years	1 (1%)	38 (38%)	4 (4%)	1 (1%)	3 (3%)	47 (47%)	0.063
11–20 years	2 (2%)	15 (15%)	5 (5%)	0 (0%)	3 (3%)	25 (25%)	
>20 years	2 (2%)	14 (14%)	10 (10%)	2 (2%)	1 (1%)	29 (29%)	
Country of practice							
Bolivia	3 (3%)	5 (5%)	0 (0%)	0 (0%)	1 (1%)	9 (9%)	<0.001
Brazil	0 (0%)	11 (11%)	0 (0%)	1 (1%)	0 (0%)	12 (12%)	
Colombia	0 (0%)	9 (9%)	2 (2%)	0 (0%)	0 (0%)	11 (11%)	
Ecuador	1 (1%)	7 (7%)	0 (0%)	0 (0%)	2 (2%)	10 (10%)	
Guatemala	0 (0%)	5 (5%)	0 (0%)	1 (%)	0 (0%)	6 (6%)	
Honduras	0 (0%)	1 (1%)	0 (0%)	0 (0%)	0 (0%)	1 (1%)	
Mexico	0 (0%)	1 (1%)	8 (8%)	0 (0%)	2 (2%)	11 (11%)	
Nicaragua	0 (0%)	2 (2%)	0 (0%)	0 (0%)	0 (0%)	2 (2%)	
Panama	0 (0%)	1 (1%)	3 (3%)	0 (0%)	1 (1%)	5 (5%)	
Paraguay	0 (0%)	5 (5%)	1 (1%)	0 (0%)	1 (1%)	7 (7%)	
Peru	1 (%)	16 (16%)	3 (3%)	0 (0%)	0 (0%)	20 (20%)	
Dominican Republic	0 (0%)	1 (1%)	0 (0%)	0 (0%)	0 (0%)	1 (1%)	
Venezuela	0 (0%)	3 (3%)	2 (2%)	1 (1%)	0 (0%)	6 (6%)	
No. lip repairs per year							
0–10	0 (0%)	25 (25%)	3 (3%)	1 (1%)	1 (1%)	30 (30%)	0.425
11–20	1 (1%)	10 (10%)	5 (5%)	0 (0%)	1 (1%)	17 (17%)	
21–30	0 (0%)	10 (10%)	5 (5%)	1 (1%)	2 (2%)	18 (18%)	
>30	4 (4%)	22 (22%)	6 (6%)	1 (1%)	3 (3%)	36 (36%)	

clearance. Because this was a survey sent anonymously electronically, it was not possible to obtain informed consent.

Statistical Analysis

Survey responses were collected in Google Forms (Google, 2024). UCL and BCL data was analyzed separately to evaluate significance in preference and techniques between the different surgeries. We also stratified responses by overall technique (eg, Fisher) to identify variations *within* techniques. Data analysis was performed in Microsoft Excel (Microsoft Corporation, 2021) and included basic descriptive statistics and statistical analysis using χ^2 and *t* tests. Statistical significance was defined as $P < 0.05$.

RESULTS

Respondent Demographics

A total of 101 surgeons that practice in 13 countries responded to the survey, with the highest representation from Peru (20%) and the lowest from Honduras and the Dominican Republic (1% each) (Tables 1, 2). The survey was sent to 101 surgeons, achieving a 100% response rate. Most respondents were male (71%) and had less than 10 years of experience (47%) (Tables 1, 2).

UCL Repair

Technique preference did not significantly vary by years of experience ($P = 0.063$) (Table 1, Fig. 1). The majority (66%) preferred the Fisher technique (Table 1), with the strongest preference among those with less than 10 years of experience (81%). Preference also varied significantly by country, although comparison is limited due to differing sample sizes ($P < 0.001$) (Table 1).

The majority of respondents closed the nasal floor by joining the septal mucosa and the lateral mucosa, releasing the periosteum from the pyriform sinus (78%) compared to those who closed the nasal floor to the vestibule only (22%).

When stratified by technique preference, there was no significant difference in choice of nasal floor closure ($P = 0.399$) (Fig. 2). The majority of respondents who closed the nasal floor by joining mucosa reported less than 10 years of experience (49%) compared to the majority of respondents who closed the nasal floor to the vestibule that reported more than 20 years of experience (41%). None of these findings were statistically significant.

The majority of respondents detached the nasal tip and wings during a primary UCL repair (60%), including 100% of surgeons that prefer Mohler. Among respondents, only 5% reported detaching the nasal tip exclusively, while 25% did not detach nasal tissue at all; however, none of these differences were statistically significant. Those who detached the nasal tissue in any manner mostly used McComb points (76%) for the nose procedure while only 2% did not utilize any additional maneuvers. However, most respondents who did not detach the nasal tissue also did not do anything to the nose independently (48%).

The majority of respondents (60%) detached the nasal tip and wings during primary UCL repair, including all (100%) who preferred Mohler. Only 5% detached the nasal tip alone, and 25% detached nasal tissue in general, although these differences were not statistically

TABLE 2. Preferences of BCL Repair Technique

n (%)	Fisher	Manchester	Millard	Mulliken	Spina	Other	Total	*P*
Respondents	29 (29%)	11 (11%)	21 (21%)	26 (26%)	6 (6%)	8 (8%)	101 (100%)	N/A
Sex								
Female	15 (15%)	1 (1%)	5 (5%)	4 (4%)	2 (2%)	2 (2%)	29 (29%)	0.032
Male	14 (14%)	10 (10%)	16 (16%)	22 (22%)	4 (4%)	6 (6%)	72 (71%)	
Years of experience								
0–10 years	20 (20%)	3 (3%)	11 (11%)	11 (11%)	1 (1%)	1 (1%)	47 (47%)	0.012
11–20 years	7 (7%)	2 (2%)	4 (4%)	5 (5%)	4 (4%)	3 (3%)	25 (25%)	
>20 years	2 (2%)	6 (6%)	6 (6%)	10 (10%)	1 (1%)	4 (4%)	29 (29%)	
Country of practice								
Bolivia	4 (4%)	1 (1%)	0 (0%)	1 (1%)	0 (0%)	3 (3%)	9 (9%)	<0.001
Brazil	2 (2%)	0 (0%)	2 (2%)	1 (1%)	6 (6%)	1 (1%)	12 (12%)	
Colombia	4 (4%)	1 (1%)	0 (0%)	5 (5%)	0 (0%)	1 (1%)	11 (11%)	
Ecuador	5 (5%)	0 (0%)	2 (2%)	2 (2%)	0 (0%)	1 (1%)	10 (10%)	
Guatemala	4 (4%)	0 (0%)	1 (1%)	1 (1%)	0 (0%)	0 (0%)	6 (6%)	
Honduras	0 (0%)	0 (0%)	1 (1%)	0 (0%)	0 (0%)	0 (0%)	1 (1%)	
Mexico	0 (0%)	6 (6%)	1 (1%)	2 (2%)	0 (0%)	2 (2%)	11 (11%)	
Nicaragua	1 (1%)	0 (0%)	0 (0%)	1 (1%)	0 (0%)	0 (0%)	2 (2%)	
Panama	0 (0%)	1 (1%)	2 (2%)	2 (2%)	0 (0%)	0 (0%)	5 (5%)	
Paraguay	4 (4%)	1 (1%)	1 (1%)	1 (1%)	0 (0%)	0 (0%)	7 (7%)	
Peru	5 (5%)	1 (1%)	11 (11%)	3 (3%)	0 (0%)	0 (0%)	20 (20%)	
Dominican Republic	0 (0%)	0 (0%)	0 (0%)	1 (1%)	0 (0%)	0 (0%)	1 (1%)	
Venezuela	0 (0%)	0 (0%)	0 (0%)	6 (6%)	0 (0%)	0 (0%)	6 (6%)	
No. lip repairs per year								
0–10	14 (14%)	0 (0%)	9 (9%)	4 (4%)	1 (1%)	2 (2%)	30 (30%)	0.006
11–20	5 (5%)	0 (0%)	4 (4%)	7 (7%)	1 (1%)	0 (0%)	17 (17%)	
21–30	5 (5%)	3 (3%)	4 (4%)	6 (6%)	0 (0%)	0 (0%)	18 (18%)	
>30	5 (5%)	8 (8%)	4 (4%)	9 (9%)	4 (4%)	6 (6%)	36 (36%)	

significant. Among those who detached nasal tissue, most (76%) used McComb points, while 2% used no additional maneuvers. Conversely, 48% of those who avoided nasal tissue detachment did not perform any independent nose procedures. Independent nose procedure preferences significantly varied by detachment approach ($P < 0.001$).

For muscle closure, 57% sutured in a single plane, with no significant differences by experience or technique preference ($P = 0.105$ and $P = 0.849$, respectively). Among Mohler users, 67% preferred single-plane suturing, while Fisher users showed more variation (55% single-plane, 18% dual fascicle). Splitting the muscle into 2 fascicles was least popular (14%) but more common among surgeons with under 10 years of experience (19%).

Half of respondents (50%) performed gingivoperiosteoplasty (GPP) in primary UCL repair, with no significant variation by experience

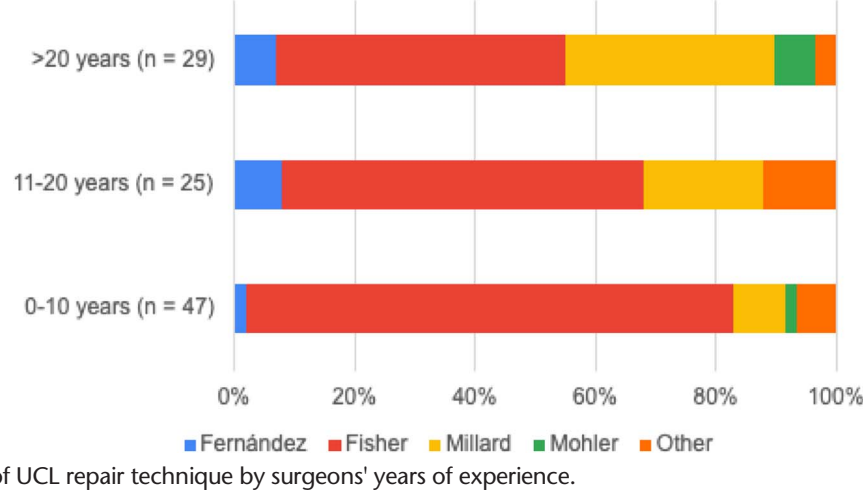

FIGURE 1. Preference of UCL repair technique by surgeons' years of experience.

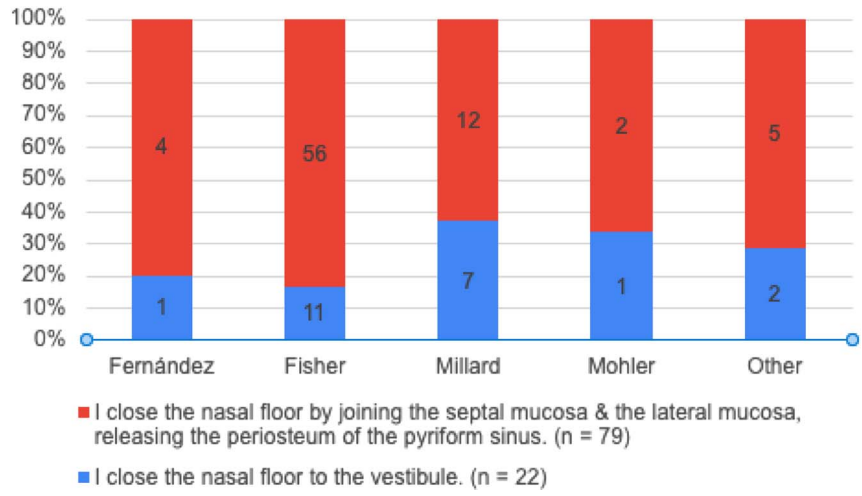

FIGURE 2. Nasal floor procedure by primary UCL technique preference.

or technique ($P = 0.766$). Among Mohler users, none performed GPP (n = 3), while 86% of "Other" technique users did (n = 6).

BCL Repair

Respondents most preferred the Fisher technique (29%), followed by Mulliken (26%) and Millard (21%), with preferences varying significantly by country ($P < 0.001$) (Table 2). Among countries with multiple respondents, Fisher was most popular in Paraguay (57%), Mulliken in Venezuela (100%), and Millard in Peru (55%). Technique preference significantly varied by years of experience ($P = 0.012$) and annual surgery volume ($P = 0.006$) (Table 2). Fisher's popularity decreased with higher surgery frequency, from 47% among those performing fewer than 10 surgeries annually to 14% among those performing over 30 (Fig. 3). A similar trend appeared with experience: 50% of respondents with under 5 years preferred Fisher, compared to 5% with over 25 years.

The majority of respondents (61%) sutured the muscle in a primary BCL repair in one plane, including all who prefer the Spina technique (n = 6). Less experienced surgeons (<10 years) showed a greater preference for 2-plane suturing (36%), although this difference was not significant ($P = 0.082$).

For a severely protruded maxilla, 58% of respondents sometimes or always performed labial adhesion, with significant variation by technique ($P < 0.001$), experience ($P < 0.001$), and annual surgeries ($P = 0.030$). Spina users (n = 6, 100%) were most likely to have always performed labial adhesion, while "Other" technique users (n = 8, 63%) were most likely to have never performed it. Only 6% of respondents were unfamiliar with labial adhesion, 83% of whom preferred the Fisher technique.

Surgeons with >20 years of experience (66%) and those who performed >30 repairs annually (53%) were most likely to never perform labial adhesion, compared to 37% overall. Conversely, 72% of respondents with 11–20 years of experience and 64% with <10 years of experience sometimes or always performed it, compared to 34% of those with >20 years of experience (Fig. 4). 100% of those unfamiliar with labial adhesion had <10 years of experience (n = 6), and 83% performed <10 repairs annually.

In cases of severe protrusion, 24% of respondents performed premaxillary setbacks, with significant variation by primary BCL technique ($P = 0.003$). Mulliken users were evenly split, as 50% performed setbacks and 50% did not.

Labial adhesion frequency varied significantly by experience and setback preference. Among surgeons with <10 years of experience,

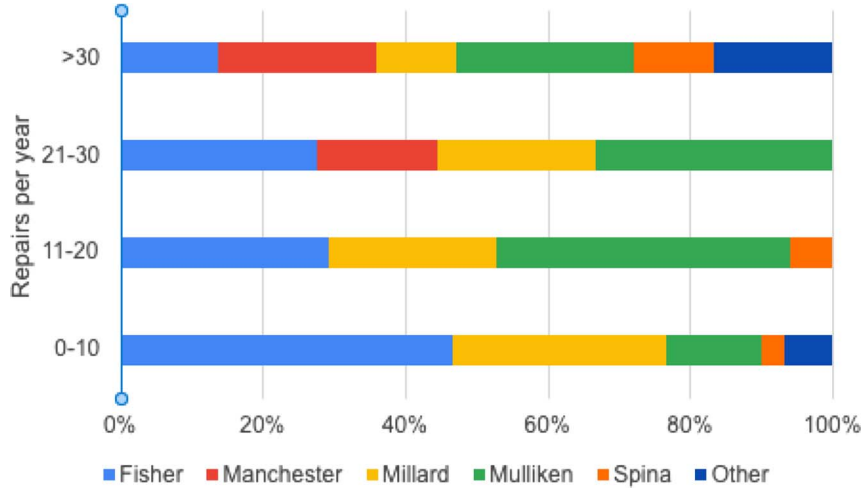

FIGURE 3. Preference of BCL repair technique by number of procedures per year.

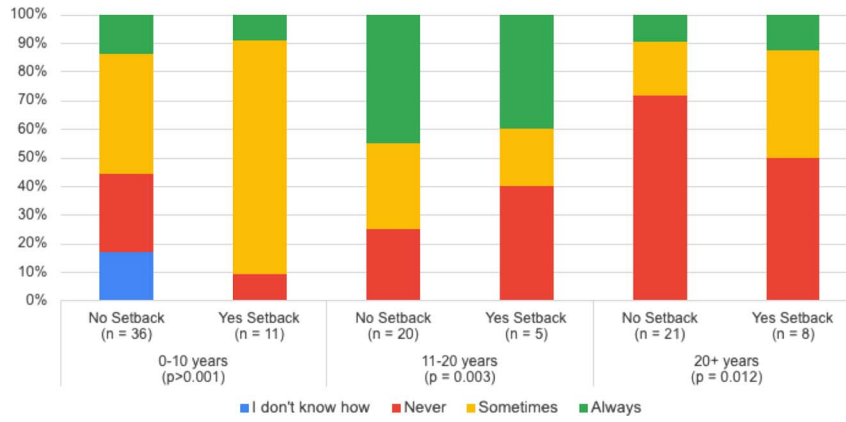

FIGURE 4. Preference for labial adhesion compared by years of experience and setback preference for severe protrusions.

91% who performed setbacks also performed labial adhesion, compared to 56% who did not ($P < 0.001$). Surgeons with >20 years of experience were least likely to perform labial adhesion (66%), regardless of setback preference (Fig. 4).

For primary BCL repair, 27% of respondents recommended vomer flaps for severe palatal cases (>15 mm), 47% for moderate cases (5–15 mm), and 27% for mild cases (<5 mm) ($P = 0.037$). Recommendations varied significantly by technique ($P < 0.001$): 50% of "Other" technique users recommended vomer flaps for severe cases, while none of the Spina did. For mild cases, 83% of Spina users recommended vomer flaps compared to 7% of Fisher users. For moderate cases, 73% of Manchester users recommended vomer flaps, versus 17% of Spina users.

Recommendation also varied by experience ($P = 0.037$). Most respondents favored vomer flaps for moderate cases, especially those with 11–20 years (48%) and >20 years (48%) of experience. For severe cases, 38% of respondents with <10 years of experience recommended vomer flaps, compared to 8% with 11–20 years of experience.

DISCUSSION

Overall, our results demonstrate variability in CL techniques among LAC surgeons. When stratified by overall technique, we found variation regarding adjuvant maneuvers such as nasal floor repair, gingivoperiosteoplasty, premaxillary setback, and the use of labial adhesion.

Surgical Technique

Our findings regarding UCL and BCL techniques diverge from what is reported in the literature. For UCL repair, the literature suggests that the Millard and Mohler techniques are the most widely used techniques for UCL.[7,14,15] In our study, the majority (66%) of surgeons reported using the Fisher technique for UCL. Several surgeons also reported a preference for the Fernández technique, an unpublished approach to UCL repair developed by Dr. Moisés Fernández, a Bolivian surgeon familiar to many Operation Smile volunteers. This novel technique modifies the Mohler method and others by using anatomically defined subunit boundaries to guide precise geometric measurements. It enables controlled elongation of the medial and lateral segments, resulting in geometric lip symmetry and anatomically correct nasal floor closure. Unlike traditional techniques that rely heavily on surgical skill, its systematic, step-by-step approach is easily reproducible, with a shorter learning curve and consistent, favorable outcomes. For BCL repair, the literature suggests that the Millard technique is most common, and Mulliken and Manchester techniques also widely used.[8,9,11] In our study, 29% of surgeons reported using the Fisher technique for BCL.

Surgeons with less than 10 years of experience were more likely to prefer the Fisher technique (significantly for BCL, but not UCL). This may reflect the Fisher technique's rise in popularity over the past 2 decades, with some surgeons associating Fisher with better aesthetic outcomes.[5,16]

Nasal Floor Closure and Vomer Flap

There is significant variability in the timing of nasal floor defect repair, with some surgeons addressing it during primary lip or palate surgery and others delaying until alveolar bone grafting.[17] Inadequate nasal floor repair affects nasal appearance, speech, and can result in oronasal fistulas causing nasal regurgitation.[17,18] Proper reconstruction supports nasal cartilage, prevents deformities, provides a stable base for rhinoplasties, and aids future bone grafting.[18]

Despite its importance, nasal floor reconstruction receives limited attention in the literature. Detailed descriptions of the nasal floor repair are lacking in the literature as landmark papers have only described the procedure in brief.[19] Several techniques have been described for closing the nasal floor including Millard's use of medial and lateral flaps, the modified triangular flap, the cleft margin flap, and the vomer flap.[17,18,20,21]

In our study, all surgeons reported closing the nasal floor, but approaches varied significantly, independent of CL repair technique. A common misconception is equating vestibule closure with nasal floor closure—22% of surveyed surgeons made this error. Less experienced surgeons often joined the mucosa to close the floor, while more experienced surgeons attached the floor to the vestibule, reflecting generational differences in training and understanding of anatomical closure.

Regarding vomer flap use, 27% of surgeons recommended it only for severe BCL cases, with preferences varying by technique. Spina users favored vomer flaps for mild and moderate defects but not severe cases. In contrast, nearly 50% of Millard users and one-third of Fisher users recommended vomer flaps for severe cases, highlighting its role as an adjuvant maneuver, independent of nasolabial repair technique. Surgeons with >11 years of experience were more likely to recommend vomer flaps for mild cases, while those with <10 years preferred them only for severe cases, suggesting increased flexibility with experience.

Gingivoperioplasty

The use of GPP, which can be performed in conjunction with CL repair, carries the risk of impairing maxillofacial growth.[22] It has been shown to potentially reduce the need for alveolar bone grafting (ABG), in 30%–73% of cases, without hindering maxillofacial growth.[22] However, other studies have shown lower clinical success, with 28%–78% of patients subsequently needing ABG.[23,24] Factors such as having a complete cleft lip and palate (CLP), undergoing GPP at a younger age, and operating surgeon may impact the need for ABG following GPP.[23]

In our study, approximately 50% of surgeons reported routinely performing GPP as part of CL repair. This practice did not exhibit significant variation based on the surgeons' years of clinical experience or their preference for a UCL surgical technique. This suggests that the decision to incorporate GPP may be influenced more by institutional protocols or individual training backgrounds rather than personal experience or technique-specific factors.

Premaxillary Setback

Overprotrusion or rotation of the premaxilla is a common challenge in bilateral CL and palate (BCLP), complicating functional primary lip repair.[25,26] Dentofacial orthopedic devices like nasoalveolar molding (NAM) can align the premaxillary and lateral alveolar segments but face limitations due to patient age, cost, and accessibility.[25,27] Vomerine ostectomy and premaxillary setback are alternative solutions but carry risks of ischemic necrosis.[25]

There are no current guidelines for combining premaxillary setback with BCL repair.[28] Studies have reported positive outcomes, with no serious ischemic complications, even when combined with procedures such as rhinoplasty or GPP.[25,27] Premaxillary setback has also enabled synchronous bilateral nasolabial-alveolar closure, making it a viable option when dentofacial orthopedics are not feasible.[29]

In our study, 76% of surgeons do not perform premaxillary setbacks, likely reflecting technical challenges and limitations in outreach settings. Usage did not correlate strongly with experience: 23% of surgeons with <10 years of experience, 20% with 11–20 years, and 27% with >20 years reported performing setbacks. Surgeons with <10 years of experience were more likely to combine setbacks with labial adhesions, reflecting modern training that emphasizes a broader range of cleft repair techniques.

Labial Adhesion

Labial adhesion can be done for UCL or BCL repair and in conjunction with premaxillary setback. For BCL repair, it can aid cases of severe protrusion, but as a 2-stage surgical procedure it may disturb anatomical landmarks and risks wound dehiscence in cases of severe protrusion.[26] Research on the success of labial adhesion remains scarce in literature as results are variable depending on cleft phenotype. In a study involving BCL repair, excellent results were observed short- term at 1 year of age, but in the long term, results at 7 years of age suggested a need for secondary revisions to improve lip and nasal appearance.[30] On the other hand, in a study involving complete UCL repair, excellent long-term results were observed, suggesting lip adhesion as a reasonable alternative to presurgical molding in UCL.[31]

A majority (58%) of our surgeons reported using labial adhesion sometimes or always, but 6% reported not knowing what lip adhesion was. This preference varied significantly by technique preference, years of experience, and number of surgeries per year. Most surgeons with over 20 years of experience, including 66% who prefer premaxillary setback (Fig. 4) and 58% performing over 30 surgeries annually, reported never using labial adhesions for a protruded premaxilla.

Limitations

Limitations for our study include the absence of patient-specific data and objective postoperative measurements, such as nasal wing width, nasal projection, and columellar-bow distance. Including preoperative and postoperative outcomes in future research would allow for a more comprehensive assessment of how surgical preferences influence aesthetic and functional results. Additionally, the survey was conducted exclusively among surgeons affiliated with a nongovernmental organization, which may not fully capture the practices of surgeons working in other settings. Some findings should be interpreted with caution, as there is potential for confounding. For example, the observed decrease in Fisher technique use with increased BCL repair volume may reflect differences in training backgrounds, as more experienced surgeons (who perform a higher volume of cases) may not have been trained using the Fisher technique (Fig. 3).

Other factors not assessed, such as variations in training and education, may also play a role in shaping surgical preferences. Plastic surgery training is not uniformly available across Latin America, with some countries, such as Bolivia, lacking dedicated plastic surgery residency programs.[32] Furthermore, while most programs provide exposure to cleft care, the extent of hands-on experience may vary, suggesting that technique selection may be influenced by the type and depth of training surgeons receive.[32]

CONCLUSIONS

Predictably, our results demonstrate a lack of consensus on UCL and BCL repair techniques—including variation *within* overall repair techniques—which is consistent with what is known in the cleft literature. Despite this variability, we did identify a trend in preference for the Fisher technique for both UCL and BCL, especially among younger surgeons. This diverges from what has been reported in the literature previously.

Given the large cleft burden in the LAC region, it is important to understand current practices in the region to begin to address other challenges in cleft care, including outcomes and complications.[12] This study represents a preliminary effort to describe cleft repair techniques on a granular level—including details such as nasal floor closure and use of GPP—in a cohort of LAC surgeons that spans 13 different countries. Our results suggest that future research endeavors regarding cleft care in this region might benefit from focusing on outcomes and complications of the Fisher technique for both UCL and BCL.

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