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Cleft Lip and Palate: Impact of the Introduction of Free Care at the Brazzaville University Hospital Centre

—Fentes Labiopalatines: Impact De L'Introduction De La Gratuite Des Soins Au Centre Hospitalier Universitaire De Brazzaville

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Abstract

Access to comprehensive treatment for cleft lip and palate remains limited for disadvantaged populations due to cost. **Aim:** To assess the impact of the introduction of free treatment for cleft lip and palate. **Materials and method:** This was an analytical cross-sectional study with retrospective data collection, covering two phases: a period before the introduction of free care from January to December 2020 and a period after the introduction of free care from January to December 2021. The study population consisted of all patients operated on for cleft lip and palate during the study period in the stomatology and maxillofacial surgery department of the Centre Hospitalier Universitaire de Brazzaville (CHU-B). **Results:** Our population consisted of 49 patients operated on, 10 before the introduction of free surgery and 39 afterwards. The predominant sex was female (59.18%). An improvement was noted in several indicators of access to care, in particular, the average age of the first consultation was reduced, with an improvement of 83.33%, and the average age of the first surgery was reduced, with an improvement of 61.11%. The average number of consultations per patient increased by an average of +1.15. The number of operations per patient increased, with an improvement of 150%. The rate of complete follow-up improved by 88.74%. **Conclusion:** The introduction of free care in our context has had an overall positive impact on patient care. We noted an improvement in access to and quality of care.

Keywords

Cleft Lip and Palate, Free Care, Access to Care, Quality of Care

1. Introduction

Cleft lip and palate, the most common facial malformation, represent a real therapeutic and psychosocial challenge with multiple repercussions. They require lengthy, holistic and multidisciplinary treatment, which is increasingly costly [1] [2].

In developing countries, access to comprehensive treatment remains limited due to costs, the lack of universal insurance mechanisms, and the lack of specialised infrastructure, particularly for disadvantaged populations [1] [3].

In Congo, in response to these difficulties, the association "SOS SOURIRE CONGO" has instituted a programme of free treatment for cleft lip and palate at the Brazzaville University Hospital Centre since 2021. The programme consists of free cleft lip and palate care, training for staff and community awareness-raising on the issue of cleft lip and palate.

The introduction of free care aims to reduce health inequalities and encourage early and comprehensive care, which in turn improves socio-professional and educational integration [3] [4]. Its actual effectiveness in terms of improved access, quality and therapeutic results remains poorly documented.

This being said, does the introduction of free care actually improve patient care in terms of access to care, therapeutic follow-up and clinical outcomes in Brazzaville?

It is with this in mind that we conducted this study, the aim of which was to evaluate the impact of this programme of free comprehensive care for patients with cleft lip and palate.

2. Materials and Methods

This was an analytical cross-sectional study with retrospective data collection, over a period of two years, covering two phases:

- A period before total free access, from January to December 2020.
- A period after the introduction of total free access, from January to December 2021.

The study was conducted in the Stomatology and Maxillofacial Surgery Department of the Brazzaville University Hospital Centre (CHU-B). Since 2021, the department has been working in partnership with the Congolese humanitarian organisation "Sos sourire Congo", through a programme of free holistic treatment for cleft lip and palate. Before the service was free, it consisted mainly of surgery, speech therapy and nutritional assistance. After the introduction of free care, in addition to the above-mentioned services, awareness of free care was raised by means of a poster in front of the hospital.

The study population consisted of all patients operated on for cleft lip and palate during the study period. Patients whose parents did not consent and patients who were not followed up postoperatively were excluded. The minimum follow-up period was 3 months after surgery. Patients were included by simple random selection.

For data collection, patient follow-up records were used to collect indicators of access to care.

Our sample was divided into two subgroups, G1 and G2, depending on when free care was introduced.

- G1: patients treated before total free access.
- G2: patients treated after the introduction of free health care.

Parameters studied:

- Socio-demographic: gender, origin, socio-economic level, etc.
- Clinical: type of cleft, type of associated treatment.
- Indicators of access and quality of care: age of first consultation, age of first surgery, number of consultations per patient, rate of complete follow-up, waiting time for pre-anaesthetic consultation, number of operations per patient.
- Clinical outcome

Follow-up was considered complete if the patient attended at least two pre-operative consultations and at least three post-operative consultations in the three months following surgery.

We used Microsoft Excel version 7 to create the database and graphs. SPSS 23 was used for data processing. A comparison was made between the proportions and averages of the indicators for the two periods before and after the free surgery. This was done by calculating absolute variations and relative improvement. Negative variations mean a reduction in the indicator and therefore an improvement. In addition, Fisher's chi2 test for qualitative variables and Student's t test for quantitative variables with a significance threshold set at $p < 0.05$ were used to assess the significance of variations.

3. Results

Our study population consisted of 49 operated patients, including 10 before the introduction of free surgery (G1), 39 after the introduction of free surgery (G2).

The total number of operations was 98, including 13 before and 85 after the introduction of free surgery. The majority of the patients in our study were female (59.18%). Patients from localities more than 50 km from Brazzaville accounted for 20% of G1 patients compared with 44.9% of G2 patients.

The socio-economic level was dominated by the low level, with no difference between the two phases (**Figure 1**).

The types of cleft found are shown in **Figure 2**, without distinguishing between phases.

Table 1 compares the different indicators of access and quality of care between the two phases.

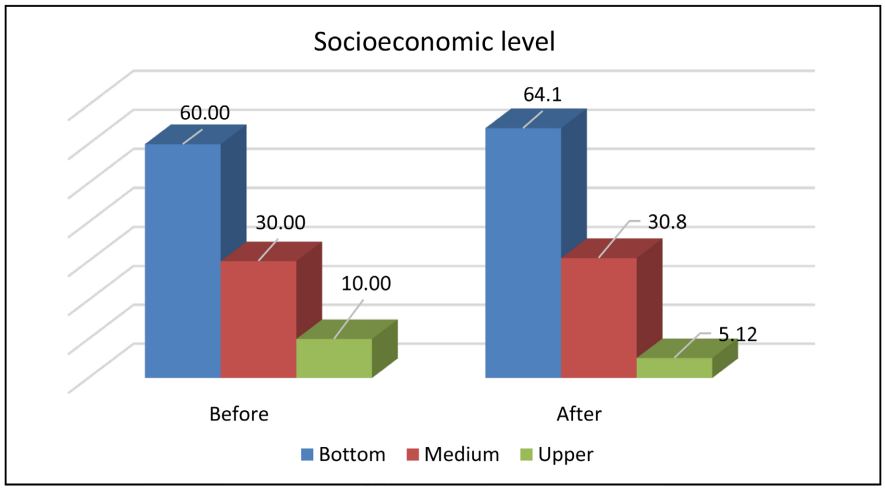

Figure 1. Distribution of parents' socio-economic level according to phase.

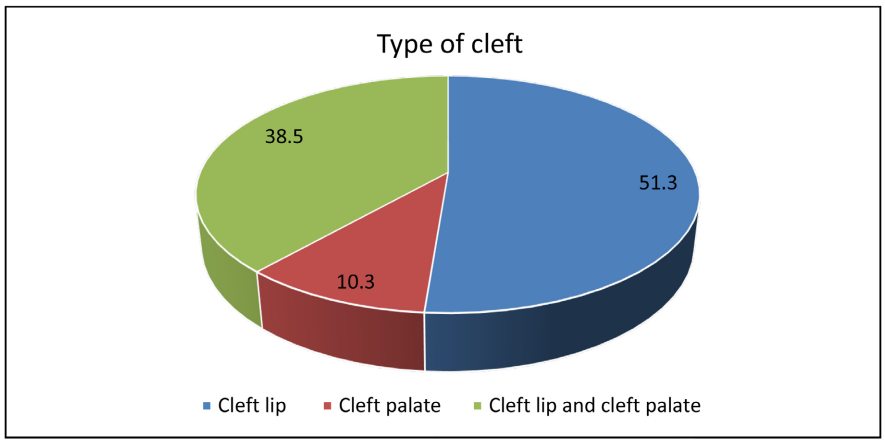

Figure 2. Distribution of types of cleft operated on.

Table 1. Summary of the comparison of the different indicators of access and quality of care before and after the introduction of free care.

Indicators of access and quality of care	Before free care (n = 10)	After free care (n = 39)	Absolute difference in means	Relative improvement	p (significance)
Age at first contact (months)	6 ± 0.2	1 ± 01	−5 ± 0.2	83.33%	0.001
Age at first surgery (months)	18 ± 1	7 ± 0.2	−11 ± 1	61.11%	0.001
Average number of consultations per patient	2 ± 0.1	5 ± 0.3	+3 ± 0.2	150%	0.001
Number of operations per patient	1.3 ± 0.1	2.18 ± 0.1	+1.15	88.5%	0.002
Rate of complete follow-up	30%	89.74%	59.74%	88.74%	0.001
Average waiting time for pre-anaesthetic consultation	10 jours ± 0.8	3 jours ± 0.2	−7 jours ± 0.6	70%	-
Postoperative complications	20%	12.8%	−7.2%	36%	0.62 (t. Fisher)

Use of complementary treatment with surgery was reported in Table 2.

Table 2. Distribution of types of complementary treatment before and after.

Variables	Total	Type of adjuvant care depending on whether it is free of charge		OR [IC95%]	p
	N = 49	**Before n = 10(%)**	**After n = 39(%)**		
Nutritional assistance					
Yes	1	1 (10)	19 (48.7)		
No	9	9 (90)	20 (51.3)	–	**0.04**
Speech therapy assistance					
Yes	2	2 (20)	10 (25.7)	–	**0.9**
No	8	8 (80)	29 (74.3)		

The increase in nutritionist assistance during the free phase was notable, with a statistically significant difference (p = 0.04).

4. Discussion

The treatment of cleft lip and palate is long, multidisciplinary and costly, with surgery performed in several stages following a rigorous timetable. This treatment is often multidisciplinary, with surgery often combined with nutritional assistance and speech therapy, as well as other therapeutic means [3]-[6].

In developing countries such as Congo, this type of treatment encounters numerous obstacles linked to difficulties in accessing care due to cost and socio-economic inequalities [3] [4] [7].

The introduction of the SOS SOURURE CONGO free-of-charge programme aimed to improve access, reduce complications and increase the number of patients to be treated.

Our study population consisted of 49 operated patients, 10 before the introduction of the free programme, and 39 after the introduction of the free programme, *i.e.* an increase of 290%. The majority of patients were female (59.18%), from distant localities and from families with a low socio-economic status (over 60%).

This corresponds to the classic socio-demographic profile of cleft lip and palate [1] [3]-[6].

Prior to the introduction of free care, it was found that access to care was limited due to a small number of patients, late age at first consultation and first surgery, and abandonment of care due to a low follow-up rate.

However, in contrast to other studies such as those in Thailand [3], there was no inequality of care according to socio-economic level.

Analysis of the two periods enabled us to identify statistically significant improvements in several quantitative and qualitative indicators, in particular improved access to care. We found that

- The number of patients being treated increased by 290%, which suggests that access to care has been facilitated by the fact that it is free of charge. This indicator was directly improved in the majority of studies [3] [4]. In addition to free access, this indicator is also influenced by improved awareness [3].
- The mean age of first consultation was reduced to an average of -5 months, *i.e.* an 83.33% improvement ($p = 0.001$). Free access would encourage early detection and better management of the active file [3]-[8].
- The mean age at first surgery was reduced to a mean of −11 months, an improvement of 61.11% improvement ($p = 0.001$). Earlier surgery reduces ENT complications, improves psychosocial experience, and promotes comprehensive management with the aim of improving aesthetic and functional results [3]-[6].
- The average number of consultations increased to an average of +3, *i.e.* an improvement of 150% ($p = 0.001$).
- The number of operations per patient increased to an average of +1.15, *i.e.* an 88.5% improvement ($p = 0.002$).

This reflects not only the removal of financial barriers, but also families' renewed confidence in the healthcare system, as observed in numerous studies [1] [3] [5]. Instead of being limited to a single procedure, patients now have access to complementary steps such as palatal repair and touch-ups, which not only broadens access to care but also improves the quality and completeness of treatment [9]. Families from modest backgrounds who previously refused or delayed treatment because of the cost, as was the case in Thailand [3].

- The rate of complete follow-up showed a difference of +59.74%, *i.e.* an improvement of 88.74% ($p = 0.001$). This reflects better adherence to the care pathway and effective planning of the stages of care. This improvement in compliance favours a reduction in complications, and a reduction in geographical disparities (improvement in the origin of patients living in localities more than 50 km from Brazzaville), a finding made as much in our study as in those elsewhere [3] [7].
- The waiting time for the anaesthetic consultation was reduced by 7 days, *i.e.* a reduction of 70%, reflecting better functioning of the preoperative circuits, probably due to upstream planning and clear prioritisation of the programme.
- Postoperative clinical results were generally satisfactory in both periods. periods. There was a reduction in post-operative complications of around −7.2%, *i.e.* an improvement of 36%, which suggests an improvement in the quality of surgical care and more rigorous post-operative management. This translates into a clear improvement in patients "quality of life and parents" satisfaction, in line with the results of numerous studies [7] [10]-[12]. Nevertheless, there was no statistically significant difference in the effect of free care on postoper-

ative complications (p = 0.62).

- As the care provided is multidisciplinary, we have noted an increase in access to complementary services such as nutritional assistance or speech therapy. Concerning nutritional assistance, which was systematically indicated, there was a significant difference between the two periods (p = 0.04).

Furthermore, despite the progress made, the introduction of free care also poses a number of limitations, in particular certain obstacles to accessibility due to transport or accommodation costs, and the risk that prioritisation of these patients will lead to saturation of the surgical programmes, to the detriment of other patients [3].

5. Conclusion

The introduction of free care in our context has had an overall positive impact on patient care. There has been an improvement in access to care through an increase in the number of patients treated, a reduction in the age of first consultation and first surgery, an increase in the number of surgeries per patient and satisfactory clinical results.

Statistical analysis confirms significant quantitative and qualitative improvements.

To consolidate these achievements, it is recommended that this approach be supported by a strengthening of human, material and organisational capacities in order to maintain the quality of care.

The outlook is to make free care permanent, improve the proximity of care, extend it to other malformations, and strengthen community protection of cleft lip and palate carriers.

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Authors' Contributions

All the authors contributed to this work. All have read and approved the final version of this manuscript.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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