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Free Cleft Lip and Palate Surgeries in a Resource Poor Community: Calabar Experience Under Smiletrain

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Abstract

We studied the case notes of patients that presented for treatment of cleft lip and palate under the free Smiletrain cleft lip and palate program in Calabar. There were a total of 134 case notes but two case notes did not fulfill the inclusion criteria. Biodata was collected and the total number of cleft lip and palate repair decreased from 37 in the year of commencement free surgeries to 17 at the end of the period under study. The average age at repair for each year generally reduced progressively from commencement to the end of the study. The relative prevalence of the different clefts shows a trend to what is seen in other studies.

Aim: The aim of this study is to evaluate the response of the people to a free cleft lip and palate surgery program in a resource-poor community and to compare the prevalence of the different types of this congenital defect in our society to the findings in other communities.

Keywords: Cleft lip and palate; Resource poor communities; Smiletrain

Introduction

Calabar is a city in South Eastern Nigeria, the capital of Cross River State. Hospitals in this city provide specialized health care to a wide area made up of 9 local Government areas extending from Obudu in the north to Calabar and Oban in the south, a land mass of 20,156 km and a population of 3.738 million as documented in the 2016 population census. Most of this area is inhabited by peasant farmers who find it difficult to afford the cost of treatment or even transport fare to access health care in the capital city. The introduction of free cleft lip and palate treatment by Smiletrain has given these people the opportunity to receive treatment. The patients for this study come from this area. Smiletrain is an international children's charity organization based in the United States of America with the focus to repair cleft lip and palate free all over the world. The repairs in this study were done in a private clinic, ultimate medical consultants in Calabar, after certification of facilities by experts sent by Smiletrain.

The lips are a pair of organs that form part of the face. They are composed of the skin, subcutaneous tissue, muscles and the oral mucosa. The preservation of some anatomic structures is important in lip reconstruction. These structures include (a) the Filthral columns on the upper lip. These two slight elevations extend from the root of the Columella to the white roll, (b) the white rolls extend from the right to left oral commissures, (c) the oral commissures are the angles of the mouth, (d) distal to the upper lip white roll and proximal to the lower lip white roll is the vermilion of the two lips, (e) the normal upper and the lower lips meet along the red line (f) the latter separate the vermilion from the oral mucosa. The Philthral columns meet the white roll at the cupid bow peak. The distance between these peaks form the cupid bow. On the central part of the upper lip vermilion is the tubercle. The lower lip is convex and has neither a cupid bow, cupid bow peak nor a tubercle. However, the lips may have variations as illustrated in the figures below.

Figure 1 shows the normal convex lower lip vermillion but the lower lip in Figure 2 has the vermillion separated by a central groove. However, on the upper lip the tubercle of the vermillion is fairly constant.

The palate is the roof of the mouth. It is made up of two horizontal shelves that meet together in the centre. It has the hard and soft palate plus the uvula. Congenital deformities include unilateral, bilateral and submucous cleft. In repair of cleft lip and palate an attempt is made to reconstitute these structures.

The lips are mobile organs that are important in normal speech. They occupy a prominent part

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Figure 1: The normal convex lower lip vermillion.

Figure 2: The lips may have variations as illustrated.

of the face and therefore defects and deformities of the face give the patient aesthetic concern. The palate is important in separating the oral from the nasal cavity to avoid feeding problems and the uvula is necessary for normal speech.

Methodology

This is a six-year retrospective study from the year 2011 to 2016. All the case notes of patients from the year 2011 to 2016 totaling 132 were retrieved and analyzed. Two cases that require staged surgeries were excluded from the study because Smiletrain, the NGO that offers this free cleft lip and palate service, does not pay for staged surgeries. One of the two cases is an undergraduate university student that had a failed lip repair as a baby and now had a central upper lip defect with the central incisor teeth exposed. He had a two-stage lip switch flap (ABBE FAP) repair. The second patient had three failed repairs of the palate before presentation and required a tongue flap repair in two stages. The data used for the study include age, sex, address, type of cleft, complications of surgery, satisfaction to babies' parents or patients in adult cases.

Data analysis

The total number of patients seen over a six year period was 134. Patient turn out for this procedure decreased from 37 patients in the year 2011 to 17 in 2016 (Table 1). The oldest patient had lip repair at 56 years while the youngest had the procedure at 3 months. The average age at lip repair also reduced from 12.3 years in 2011 to 2.1 years in 2015; but due to the fact that the number of adult patients were high and the total numbers of patients were relatively few in the year 2016 the average at repair increased to 9.6 years (Table 1).

Table 1: Distribution of cleft lip and palate between the year 2011 and 2016.

Year	Number of clefs per year	Average age at repair	Male	Female	Isolated cleft plate
2011	37	12.3 years	12	25	2
2012	34	7.1 years	17	17	4
2013	13	5.6 years	5	8	2
2014	18	4.3 years	9	9	4
2015	13	2.1 years	7	6	2
2016	17	9.6 years	6	11	2
Total	**132**		**56**	**76**	**16**

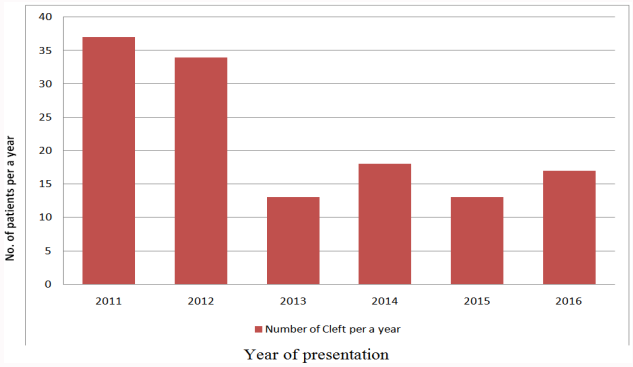

Figure 3: Bar chart to show number of patients presented each year.

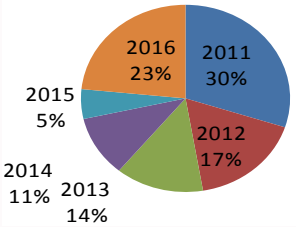

Figure 4: Pie chart to show average age at repair.

However, generally it can be seen that the age at repair reduced steadily from the beginning of the free surgery program. The ratio of unilateral cleft lip and palate in the male to the female is 1:1.7 while the ratio of cleft of the right lip to cleft of the left lip in both sexes is 1:1.5. The ratio of bilateral cleft lip and palate to unilateral cleft lip and palate in both sexes is 1:2.8 (Figure 3 and 4).

Discussion

The focus of this retrospective study is to assess the effect of a free cleft lip and palate surgery treatment in a resource poor community [1]. The data shows that many patients grew up to become adults with cleft of the lip and/or palate because of a number of factors which may include financial constraints, ignorance or cultural beliefs [2]. Zajac et al. [3] managed many adults with clefts and cleft lip surgeries were done under local anesthesia; we used the same anesthesia for adults with cleft lip [4-6]. The institution of a free cleft surgery program by Smiletrain in the year 2011 in our hospital and the enlightenment campaigns on radio, television and visits to various communities seem to reassure the people that clefts can be repaired safely and free of charge. Therefore, the adult patients presented in large numbers at the beginning of the program in 2011, and the averages age at presentation decreased from that year to 2016. Mention has to be made that some cleft patients may have lost their lives from

Figure 5: The postoperative picture of a baby that probably escaped this tragedy.

repeated ear and respiratory tract infection [1,7,8]. Indeed, in some communities, severe cases of craniofacial clefts have been labeled monsters and the babies abandoned to die from starvation.

Figure 5 is the postoperative picture of a baby that probably escaped this tragedy [9]; the parents of this baby failed to bring him for postoperative check up and secondary surgeries. Therefore the importance of free cleft surgeries by Smiletrain cannot be overemphasized.

A study by Ahmed et al. [10] has shown that the prevalence of orofacial clefts is lowest among Africans at 0.18 to 1.67 per 1000 live births. However, the prevalence of the different clefts in this study has not shown a mirror image with studies done elsewhere in the World. For instance the ratio of left sided cleft lip to right side cleft lip in our study is 1.5:1 while Fraser and Calnan documented a ratio of 2:14. Ahmed et al. [10] also found that cleft lip and palate are commoner on the left. Isolated cleft lip constituted 21% in our series while this constituted 33% of the study Frazer and Calnan [4]. Other findings in that study if compared with our study shows the following: Cleft lip and palate were 46% of all the cases but we had 20% in this group; isolated cleft palate constituted 33% but we had 11% and finally in that series bilateral cleft lip had cleft palate in 86% of cases but in our series bilateral cleft lip had cleft palate in 73% of cases. Some factors may have been responsible for these differences. The fact that at the beginning of the free cleft program many of the patients were adults means that some mortalities may have occurred in some cleft patients in infancy. Enlightened and wealthy parents may have sought medical attention for their children before the free program started and this can shift the statistical outcome. However, a prospective study will clarify this issue at this time when the backlogs of cleft patients have been treated by the Smiletrain program.

Conclusion

The relative prevalence of the different types of cleft as seen in other communities where cleft surgeries have been available and accessible for a long time is different from what we have in this retrospective study; this may be due to the fact that some of the cleft patients died before the free cleft program. The decreasing average age at repair, from the year 2011 to 2016 shows that there were many adult patients with clefts at the beginning of the free cleft program.

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