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# Cleft lip and palate repair: the experience from two West African sub-regional centres<sup>☆</sup>

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## KEYWORDS

Cleft lip and palate;  
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**Summary** Compliance with primary surgical treatment in people with cleft lip and palate is a well-known problem, especially in developing countries fraught with poverty and ignorance. Different protocols of treatment exist. In this paper, we retrospectively review a cohort from two centres, with a discussion on the outcome and its implications.

The records of all patients with cleft lip and palate seen in the National Orthopaedic Hospital, Enugu, Nigeria, from January 1993 to December 1999, were sought, and all available case notes reviewed retrospectively. This included new cases seen in the period, and also cases operated during this period. Follow up took place until January 2005, when the data were collated. The records of all such patients seen at Ladoke Akintola University Teaching Hospital Osogbo, Nigeria, from September 2004 to June 2006 were also collated and analysed.

During this period, 102 patients were seen (93 at Enugu and nine at Osogbo). Fifteen had isolated cleft palate, 42 had isolated cleft lip and 45 had combined cleft lip and palate. Presentation time ranged from 1 day to 43 years. The palate was not repaired in 20 people after lip repair; two patients with cleft lip and palate completely defaulted; and only one person with isolated cleft palate failed to undergo surgery in this period. Two patients in Osogbo absconded.

The West African sub-region has a high drop out rate after lip repair.

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The National Orthopaedic Hospital, Enugu, is the major centre for cleft surgeries in south-eastern Nigeria. It has the highest volume of patients with cleft lip and palate in the region, and five consultant plastic surgeons are actively involved in cleft care. Ladoke Akintola University Teaching hospital, Osogbo, is located in a major city of one of the southwestern states of Nigeria, and plastic surgery services began there in 2004.

Several studies on the management of clefts of the lip and palate have been undertaken in our sub-region.<sup>1–4</sup> It seems that some patients fail to complete surgical procedures.<sup>3,4</sup> This retrospective study aims at recording the pattern of presentation of cleft lip and palate as seen in the two hospitals, the timing and completion of surgical procedures as well as making recommendations to ensure improved care.

## Materials and methods

The records of all patients with cleft lip and palate seen in the hospital from January 1993 to December 1999 were sought, and all available case notes reviewed retrospectively. This included new cases seen, and all cases operated on, during this period. Data sought included the demographic data, time of initial hospital presentation, time and types of surgical procedures, completion of procedures among differing cleft types and pattern of follow up. The detailed description of the surgical procedures was unavailable in many instances, and there was no uniform pattern of reporting postoperative results and complications. The follow up was until January 2005.

The records of all such patients seen at Ladoke Akintola University Teaching Hospital Osogbo from September 2004 to June 2006 were also collated and analysed.

## Results

Of the 93 patients in Enugu, 47 were male (Table 1). Cleft lip and palate was the most common presentation (46%), whereas isolated cleft palate was the least (15%). At Osogbo, five of nine patients were male. Isolated cleft lip was the most common (56%) and isolated cleft palate the least (11%).

### Presentation time

Presentation time ranged from 1 day to 43 years. Fifty patients (53%) presented within 3 months of birth, 18 (19%) presented between 3 months and 1 year, and 26 (28%) presented after a year. The documented causes for the delays included late recognition of the deformity (in isolated cleft palate), financial constraints and ignorance of facilities for repair.

### Parental background

At presentation, virtually all patients were from low socioeconomic backgrounds. Maternal age at presentation

**Table 1** Cleft types seen at the National Orthopaedic Hospital, Enugu (1993–1999)

Cleft type	Sidedness	Male	Female	Total
Isolated cleft palate		5	9	14
Isolated cleft lip	Bilateral	4	2	6
Isolated cleft lip	Right	6	5	11
Isolated cleft lip	Left	12	8	20
Cleft lip and palate	Bilateral	4	4	8
Cleft lip and palate	Right	7	8	15
Cleft lip and palate	Left	9	10	19
Total		47	46	93

recorded in 40 instances ranged from 19–40 years (mean age 26 years). The father's age was recorded in 38 instances and ranged from 25–52 years (mean age 35 years).

## Procedures

The minimum number of theatre sessions was one (palatoplasty). Those for lip repair had a minimum of two theatre sessions, the second being removal of skin sutures. The maximum number (six) went to those with combined cleft lip and palate requiring fistula repair (Tables 2 and 3).

Twenty-three scheduled palatoplasties were not carried out. One patient had isolated cleft palate, 22 had combined cleft lip and palate, of which 20 defaulted after successful lip repair. Most patients failed to turn up for their appointments beyond 3 months.

## Discussion

Although cleft lip deformity is obvious and a social stigma, cleft palate is less apparent but associated with more functional problems of regurgitation, speech, recurrent ear and upper airway infections, and hearing problems. Aesthetic considerations affect the patient's social acceptance early in life. Speech problems, however, have been shown to affect the ability to obtain prestigious jobs as adults more than facial disfigurement.<sup>5</sup> The functional goals of cleft palate surgery are to facilitate normal speech and hearing without significantly affecting the facial growth of the child. Surgical restoration of all components of an abnormal velopharyngeal mechanism at an early age increases the patient's chances of developing normal speech and hearing.<sup>6,7</sup>

**Table 2** Operations carried out at the National Orthopaedic Hospital, Enugu (1993–1999)

Operation	Procedure	Timing (early)	Timing	Timing (later)	Not done
Cheiloplasty	Millard	Within 3 months: 15 (19%)	4–6 months: 18 (23%)	After 6 months: 38 (47%)	9 (11%)
Palatoplasty	Von Langenbeck: 8	Before 1 year: 1 (repeated at 20 months)	1–2 years: 23 (40%)	After 2 years: 11 (20%)	23 (40%)
	v-y pushback: 9				
	Furlow: 1 Rest not recorded				

**Table 3** Patients with cleft deformities in Lautech from September 2004 to June 2006

Sex	Age at presentation	Diagnosis	Date of lip repair	Time of palate repair	Familial	Complication
Male	2 months	Right cleft lip and palate	3 months	12 months	Nil	Notch
Female	0.5 months	Right cleft lip and palate	4 months	Not yet	Nil	
Female	168 months	Right cleft lip	168 months		Nil	Nil
Female	0.25 months	Median cleft lip	Absconded		Nil	
Male	300 months	Left cleft lip	Absconded		Nil	
Female	0.25 months	Pierre Robin syndrome + median cleft palate	Not yet repaired		Nil	
Male	0.5 months	Left cleft palate	3 months		Nil	
Male	96 months	Left cleft palate	Not yet repaired		Nil	
Male	1 month	Left cleft palate	Not yet repaired		Nil	

Cleft palate repair, therefore, is more important from a functional standpoint. In the past 10 years, failure to complete palatoplasty after lip repair has been reported, and this has been observed in the two centres under discussion.<sup>2-4</sup> Completion of procedures was greatest among the isolated palate group, and least among the combined cleft lip and palate group. This may suggest that the reason for failure to complete palatoplasty after lip repair in the combined cleft lip and palate group may be attributable to cost as well as concerns by parents about aesthetic problems.<sup>3,4</sup> The parents are predominantly from low socioeconomic backgrounds. This has also been found in other parts of the country,<sup>2,3,8</sup> as well as India,<sup>9</sup> where it is cited as the main reason for modifying the protocol of palatoplasty after cheiloplasty to a single-staged lip and palate repair.

Patients with isolated cleft lip in our series have always had two theatre sessions, whereas patients with isolated cleft palate have had only one. In these centres, the theatre fee for cleft lip repair is the same as that of cleft palate, and lip repair was not offered to children as a day-care procedure. The use of subcuticular stitches will eliminate a second theatre session, reduce costs and thereby improve compliance. Our study clearly shows that patients with combined cleft lip and palate are poorly compliant to follow-up surgery. The high percentage of drop-outs in this group is worrying. The consequences of late palatoplasty far outweigh that for late lip repair,<sup>5,7</sup> and make palatoplasty a greater priority than lip repair even though the lip defect is much more obvious. Patients with combined cleft lip and palate presenting early should still have the lip repaired at 3 months.

Palatoplasty can then take place at around 6 months, the time at which most patients are able to keep to postoperative appointments, and the time associated with better speech results. We therefore suggest that if all patients having lip repair after 6 months first have palatoplasty, or combine the two procedures in one hospital admission, the results would improve. Palatoplasty at 6 months is associated with better speech results than the procedure carried out at a later date.<sup>6</sup>

Surgeons in other developing countries are also modifying the timing of their repairs to improve results<sup>10-13</sup>,

following their example in our sub-region may produce better results. Indeed, over 170 different protocols of managing patients with cleft lip and palate exist.<sup>14</sup>

A number of surgeons travel to developing nations to assist in surgery for cleft patients. It may be advisable for them, and indeed other surgeons operating on patients with cleft lip and palate in such areas, to consider a single-staged cheiloplasty and palatoplasty in order to improve the overall results. There are indications that early repair of both lip and palate in one surgical session is not inferior in outcome to the traditional staged procedure.<sup>10,11</sup>

The prevalent high drop-out rate indicates a consideration for change in the protocol of managing cleft lip and palate patients in the West African sub-region.

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## SURGICAL PHILOSOPHY

### Architecture and plastic surgery

Architecture is, according to Vitruvius, a combination of three factors: *firmitas*, solidity, *utilitas*, utility, and *venustas*, beauty.<sup>1</sup> In the early 20th century, O. E. Schweizer reviewed this ancient concept, defining architecture as: 'the realization of the project through the combination of practicality and beauty within a context of spaces and shapes, the realisation of a project is preceded by a preliminary planning phase, i.e. a phase designed to order the spaces and constructive elements according to the project being undertaken. The demands made by the project must respect the technical possibilities the architect has access to, the means at his/her disposal, and the conditions afforded by the construction area. Moreover, the architect's project must bear in mind the wishes of those who commission the work.'<sup>2</sup>

The plastic surgeon, like the architect, considers the patient's needs, assesses them within a three-dimensional and physiological context, and weighs up the surgical options on the basis of his/her experience and aesthetic and artistic sense.

The aim of the preoperative phase of the surgical project is to assess the patient, just as the architect surveys the work site before the project starts.

The project itself is the fruit of careful observation, study, reasoning, as well as of an awareness of the technical options available and the surgeon's own surgical skills.

The skinmarker, an instrument all plastic surgeons use, implements the project by executing the surgical plan. The plastic surgeon plots the reference points of his project on the skin, just as the architect draws his project on the paper.

My mentor, Professor Scuderi, says 'observe, think and then, before starting, draw'. It is the drawing, which is

the fruit of our thinking, that guides the surgical operation.

Plastic surgery and architecture are disciplines that yield artistic beauty, yet are bound by functional and practical constraints; indeed, they achieve a goal that is deeply rooted in reality by fulfilling the wishes of those who need help.

I'd like to end by saying that I doubt whether Renzo Piano could have become a famous plastic surgeon or whether any of us can claim to be as extraordinary as Le Corbusier. In order to sublimate the planning phase through surgery, and materially execute the project, the plastic surgeon must have a good pair of hands and act according to both science and conscience. The best surgical outcome will thus be the result of careful and scrupulous planning and an equally careful execution.

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